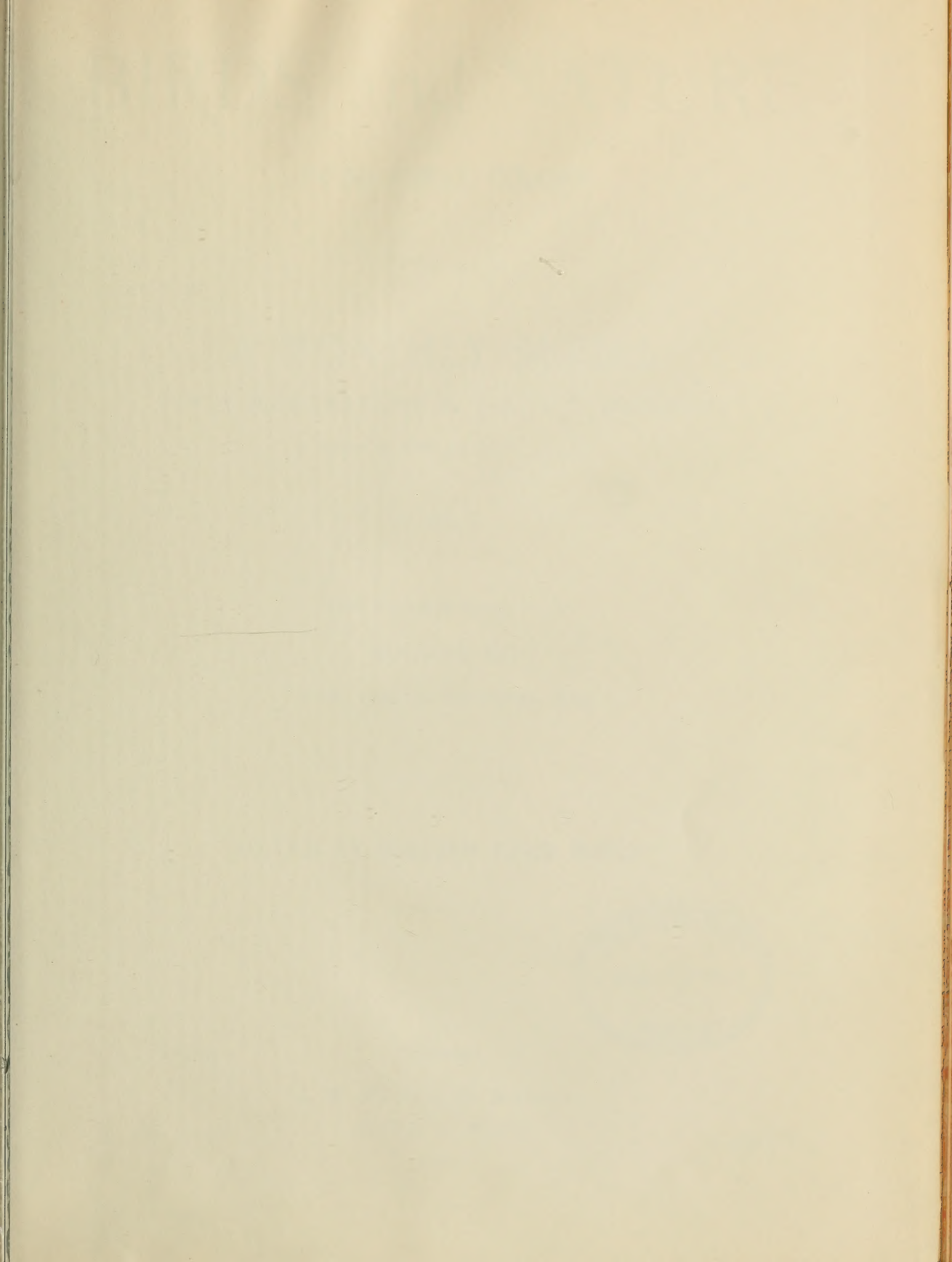




14

BIRDS and NATURE

IN NATURAL COLORS

505.73

B618

v.16

June-Dec.

1904

9

A MONTHLY SERIAL

FORTY ILLUSTRATIONS BY COLOR PHOTOGRAPHY

A GUIDE IN THE STUDY OF NATURE

TWO VOLUMES EACH YEAR

VOLUME XVI

JUNE, 1904, TO DECEMBER, 1904

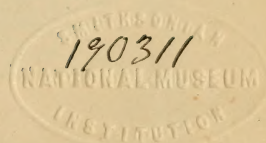
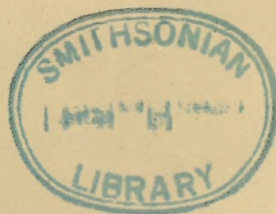
EDITED BY WILLIAM KERR HIGLEY

CHICAGO

A. W. MUMFORD, Publisher

378 Wabash Avenue

1904



COPYRIGHT, 1904, BY
A. W. MUMFORD



BIRDS AND NATURE

CONTENTS

	Page
A SONG OF CLOVES ("Saxe Holm") [Poem]	1
THE LAZULI BUNTING OR BLUE LINNET [Illustration]	2
SOME CURIOUS FACTS ABOUT THE SPIDER FAMILY (Carrie May Ashton)	5
STRANGE FOOD (Louise Jamison)	7
A MUSICAL (Maria M. Allyn) [Poem]	8
THE RED-BREASTED MERGANSER (Gerard Alan Abbott) [Illustration]	11
THE BEACH AT CORONADO, CALIFORNIA (Clara Hill)	12
RE-VISITED (George Bancroft Griffith) [Poem]	13
THE COMMON OR WILSON'S TERN [Illustration]	14
THE CROW'S WEDDING (Dorothy Lord Maltby)	17
BACK TO THE WOODLANDS (Samuel O. Gilman) [Poem]	18
DINGO—THE STORY OF A ROBIN (Elizabeth Miles Derrickson)	19
POISONOUS PLANTS (Elma Iona Locke)	20
THE AMERICAN WOODCOCK [Illustration]	23
THE PASSING OF THE WOODCOCK (H. Walton Clark)	25
THE BROODING WOODCOCK AS I SAW HER (John F. Squire)	26
THE WHITE-BREASTED NUTHATCH [Illustration]	29
HONEYSUCKLE (Loveday Almira Nelson) [Poem]	30
THE BLESSED BEES (Belle Paxson Drury)	35
THE CARDINAL BIRD [Illustration]	36
A FLYING LESSON (Myra Ormin)	38
THE AMERICAN RED FOX [Illustration]	41
TREES AND THEIR LIFE PROBLEMS (Henry Chandler Cowles)	47
THE MOUNTAIN SHEEP OR BIGHORN (Seth Mindwell) [Illustration]	48
ROSE-TIME (Frank Walcott Hutt) [Poem]	

EDITED BY WILLIAM KERR HIGLEY

ILLUSTRATED BY COLOR PHOTOGRAPHY

"TREES AND THEIR LIFE PROBLEMS." Henry Chandler Cowles, Ph.D., of the University of Chicago.

\$1.50 a Year. 15 Cts. a Copy.

A. W. MUMFORD, Publisher

378 Wabash Ave., Chicago, Ill.

BIRDS AND NATURE

MONTHLY, EXCEPT JULY AND AUGUST.

TERMS AND CONDITIONS OF PUBLICATION:

PRICE. Subscription price is one dollar and fifty cents a year, payable in advance, with 60 assorted pictures, \$2.00; single copy, 15 cents.

POSTAGE IS PREPAID by the publisher for all subscriptions in the United States, Guam, Porto Rico, Tutuila (Samoa), Canada and Mexico. For all other countries in the Postal Union add 80 cts. postage.

CHANGE OF ADDRESS. When a change of address is ordered, both the new and the old address must be given. Postmasters are not allowed to forward second-class matter until postage is sent to prepay charges. It costs two cents per copy to forward this magazine. Subscribers who do not observe this rule should not ask us to send duplicate copies.

DISCONTINUANCES. If a subscriber wishes his magazine discontinued at the expiration of his subscription, notice to that effect should be sent, otherwise it is assumed that a continuance of the subscription is desired.

HOW TO REMIT. Remittances should be sent by check, draft, express order, or money order, payable to order of A. W. Mumford. Cash should be sent in registered letter.

AGENTS. We want an energetic, courteous agent in every town and county. Write for terms and territory.

RECEIPTS. Remittances are acknowledged by change of label on wrapper, indicating date to which subscription is paid.

All letters should be addressed to A. W. MUMFORD, Publisher, 378 Wabash Avenue, Chicago

MAGAZINES, back numbers, from 1897, 15 cents a copy, \$1.50 a year; the 74 back numbers, \$8.40.

BOUND VOLUMES, I to XIV, each 8vo, 244 pages, from 40 to 60 colored pictures, 8x10 in., cloth, \$1.50. Double volumes, half morocco, \$3.00. Fourteen single volumes, cloth, \$14.00. Seven double volumes, half morocco, \$14.00.

Exchange price for bound volumes when magazines are returned: Single volumes, cloth, 75 cents. Combined volumes, half morocco, \$1.50.

COLORED PICTURES, assorted as desired, 2 cents each; to subscribers only 1 cent each, if ordered with subscription. The 616 pictures, \$6.16.

PREMIUMS. Either of the following colored pictures sent free with subscriptions: (1) Song of the Lark, 18x21, or (2) Gladstone, 18x24, or (3) The Golden Pheasant, 18x24, or (4) Twelve Industrial Pictures, 12x18, or (5) ten colored pictures from Birds and Nature.

OTHER PUBLICATIONS.

Little Folks.....	\$1.00
School Bulletin (Monthly).....	1.00
American Primary Teacher (Monthly).....	1.00
N. E. Journal of Education (Weekly).....	2.50
Educational Review (Monthly).....	3.00
10 per cent discount on any or all of these when ordered in combination with Birds and Nature. Sent to one or several addresses.	

\$4.20 FOR \$2.10

Another Combination Offer that Means Something.

BIRDS AND NATURE one year	\$1.50
*Last Ten Back Numbers BIRDS AND NATURE.....	1.50
60 Colored Pictures from BIRDS AND NATURE.....	1.20
The total amount of value.....	\$4.20

ALL FOR
\$2.10

BIRDS AND NATURE, Monthly; 48 pages, 8x10 inches; per year, \$1.50. A magazine devoted to nature, and illustrated by color photography. It is the only periodical in the world that publishes pictures of birds, animals, insects, flowers, plants, etc., in natural colors. Eight full-page plates each month.

"It is one of the most beautiful and interesting publications yet attempted in this direction. It has other attractions in addition to its beauty, and must win its way to popular favor. I wish the handsome little magazine abundant prosperity."—*Chas. E. Shinner, State Supt., Albany, N. Y.*

"You have certainly hit upon a method of reproducing natural colors with remarkable fidelity to nature."—*Dr. Elliott Coues.*

"Your magazine has certainly had a phenomenal success, and it is entirely worthy of its cordial reception."—*J. A. Allen, Editor "The Auk."*

"Most of the pictures are astonishingly good. I like them so well that I shall put them up on the walls of my rustic retreat, 'Slab Sides.'"—*John Burroughs.*

"When one considers the low price at which you sell BIRDS, the number and excellence of the plates are surprising, and I trust that your efforts to popularize the study of ornithology may meet with the success it so well deserves."—*F. M. Chapman, Associate Editor "The Auk."*

*A bound volume of BIRDS AND NATURE may be substituted for the ten back numbers.

A sample of this magazine for a dime and two pennies—12 cents
in stamps. Send for catalogue.

A. W. MUMFORD, Publisher, 378 Wabash Avenue, CHICAGO

BIRDS AND NATURE.

ILLUSTRATED BY COLOR PHOTOGRAPHY.

VOL. XVI.

JUNE 1904.

No. 1

A SONG OF CLOVER.

I wonder what the Clover thinks—
Intimate friend of Bob-o'-links,
Lover of Daisies slim and white,
Waltzer with Buttercups at night;
Keeper of Inn for traveling Bees,
Serving to them wine dregs and lees,
Left by the Royal Humming Birds,
Who sip and pay with finespun words;
Fellow with all the lowliest,
Peer of the gayest and the best;
Comrade of winds, beloved of sun,
Kissed by the Dewdrops, one by one;
Prophet of Good-Luck mystery
By sign of four which few may see;
Symbol of Nature's magic zone,
One out of three, and three in one;
Emblem of comfort in the speech
Which poor men's babies early reach;
Sweet by the roadsides, sweet by rills,
Sweet in the meadows, sweet on hills,
Sweet in its white, sweet in its red—
O, half of its sweetness cannot be said—
Sweet in its every living breath,
Sweetest, perhaps, at last in death!
O, who knows what the Clover thinks?
No one! unless the Bob-o'-links!

"SAXE HOLM."

THE LAZULI BUNTING OR BLUE LINNET.

(*Passerina amœna.*)

If it is a question of beauty of coloring no other bird may hope to surpass to human eyes this little bit of heaven's blue, with his soft, tawny breast and clear white under parts. —William Rogers Lord, "Birds of Oregon and Washington."

It seems eminently fitting that the prettily colored and delicate little Lazuli Bunting should inhabit a region of bright sunshine, gorgeous flowers and luxuriant foliage. It is an abundant bird in California and its range covers the western portion of the United States, from the Plains to the Pacific coast, and from British Columbia southward into Mexico. The female of this bird is also pretty and delicate, but she does not possess the bright colors of her mate. Her plumage is brownish above and whitish beneath. Indeed, her plumage is so plain and she is so shy and timid that she is not easily observed except when on the nest. The male, however, is not so timid and is much more conspicuous because of its brightly colored plumage and its lively song, which is uttered from an exposed position on the upper branches of a bush or tree.

The habits and song of the Lazuli Bunting are similar to those of the well known indigo bird or bunting of the eastern United States. Regarding its song, Dr. Coues says: "I do not agree with some who say that the song of the Lazuli Finch (Bunting) is entirely different from that of the indigo bird; on the contrary, to my ear at least, it sounded very similar." Though its song is simple and lacks force, the notes are sweet-toned and uttered in quite a sprightly manner. We can hardly agree with Dr. Coues, who

says: "It is a simple and even feeble strain, rather monotonous, and given in a tripping, desultory way, as if the little performer were tired or indifferent." Much more satisfactory to many who have heard the Lazuli Bunting sing is the description of Mr. Lord, who says: "His song is vivacious, varied, well articulated, and sweet," and he adds, "I have heard one say over and over, 'Here! here! why-e, don't you come here?'"

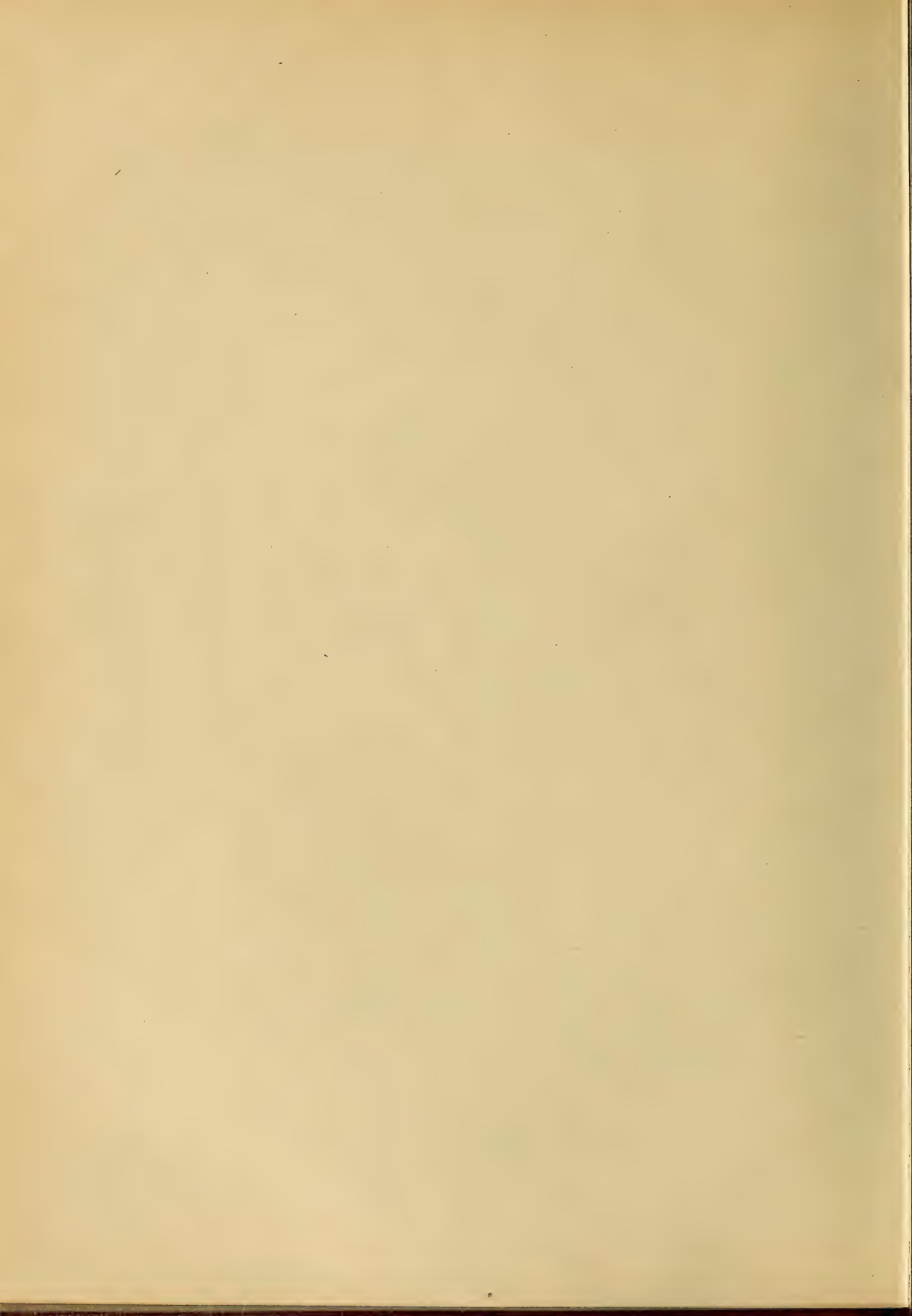
Lazuli Buntings cannot be considered gregarious birds. Yet they are common in suitable localities nearly throughout their range, and in California they are very abundant. In Colorado, where it is also quite common, Mr. Trippe says it is found from the plains to a height of 6,000 feet, and that it nests at this elevation. He also speaks of its song as weak and rambling.

The Lazuli Bunting usually builds its nest in a low bush, seldom at a greater height than three or four feet above the ground. Fine strips of bark, small twigs, fibrous roots and grasses are used in its construction, and it is lined with hairs, plant-down and feathers. Dr. J. G. Cooper describes a nest that he observed. It was "in a low bush close to the public road and about three feet from the ground, was built very strongly, supported by a triple fork of the branch and composed of grass blades finely interwoven, the inside lined with much horse hair and cobwebs."



LAZULI BUNTING.
(*Passerina amoena*).
 $\frac{7}{8}$ Life-size.

COPYRIGHT 1900, BY A. W. MUMFORD, CHICAGO



SOME CURIOUS FACTS ABOUT THE SPIDER FAMILY.

Jack Wilson and Morris Brown were spending a week in the country with friends, and during a long stroll on a fine autumn morning Jack exclaimed with a little shudder: "There is an ugly spider on your coat Morris. Wait and I'll brush it off," as he raised his umbrella for that purpose, but Morris caught it, saying: "Don't Jack, I want to look at that spider. See what a beautiful little creature it is!"

"Beautiful!" exclaimed Jack in a tone of mingled surprise and contempt. "How can you say so, Morris Brown? I do not wonder at your devotion to butterflies and moths. I admire them myself and I can excuse your fondness of beetles, but your admiration for a spider is beyond my comprehension. Ugh! it fairly makes the cold shudders run over my back to see you handling that."

"Never mind, old fellow. I used to feel as you do about them until I visited Uncle John two years ago and heard him tell of their interesting habits and read about them in some of his books on Entomology. Since then, I have taken great pleasure in studying them and examining their curious webs and nets. Look closely at this spider and see how beautifully she is colored. Like all members of the spider family, her body is divided into two regions—a cephalothorax or head-thorax and an abdomen, and she also has eight eyes and eight legs. She is one of the most beautifully dressed of the spider family, her head-thorax being robed in silver grey, her abdomen beautifully marked with black and yellow and brown, and her legs, dark orange ringed with brown and black."

After a few moments of close scrutiny Jack exclaimed: "It is not so very ugly after all. Are spiders insects?" he inquired abruptly.

"They are related to them and their scientific name is *Aracnida*," his friend made answer. "They belong to that branch of animals called the *Arthropoda*, which includes the crayfishes, the centipedes, the insects and the spiders, the

last being placed in a class called the *Aracnida*, a name derived from the Greek word for spider. This specimen is sometimes called the large meadow spider, but the technical name is *Argiope riparia*.

"Did you know that here in America there are between six and eight hundred species of spiders? Here in these weeds is the web of our spider."

Kneeling on the ground before it, Morris spread a black note-book behind it to form a background.

"How beautiful it really is," exclaimed his friend. "I cannot remember of ever seeing one like it before. It is a veritable work of art."

"Uncle told me just how the spider spins its web, but I have forgotten many of the details. She first lays out an irregular polygon of lines which form the framework of the wheel-shaped web. She then fills in the radii or spokes. Then she begins near the center and spins a long thread, moving around the net toward the framework. When she reaches it she reverses her movement, thus carrying her line round and round toward the center. This last line is covered with sticky beads, which hold captive the numerous insects which fly against it."

"Do all spiders spin their webs in a similar manner?" inquired Jack, his interest in the spider family growing.

"All spiders that belong to the group known as geometrical spiders do. Our common house and cellar spiders weave irregular webs. Many do not weave webs or nets at all. Some lie in ambush for their prey and sometimes run after it a short distance. They have been called vagrants. Others that are constantly running about seizing their prey by open violence are called hunters. Still others capture their food in the water and these are called swimmers."

The boys resumed their walk when Morris stooping down exclaimed: "oh! Jack, look at this cunning little tower!" It was a tiny structure fashioned from

bits of grass, straw and stalks of weeds, intermingled with particles of earth, and lined with a silken web. It was not more than two inches in height and encircled an opening in the ground an inch in diameter and which sunk down out of sight.

"How glad I am that I happened to have this bit of cotton and a knife in my pocket," remarked Morris. "I'm going to preserve this little tower for my cabinet." He filled the little turret with a tuft of cotton to keep it from breaking when handled and carefully loosened it from the ground.

"Who made this cunning little nest?" inquired Jack.

"A turret spider dug the hole which extends downward about ten inches and she then built this little turret around it. She is a large spider with a body about an inch in length and she has long legs."

"What is the object of this cave-nest?"

"It protects the spider from her enemies and the turret serves as a watch-tower. She often crouches on the summit and watches for grasshoppers and other insects which form her prey. If any approaching object alarms her, she quickly retreats to her cavern home. She carries her eggs about with her in a sac about as large as a grape. The sac is lashed to her body and contains a hundred or more eggs. When the eggs are hatched, the tiny baby spiders climb on the mother's back and head and live there until they are three or four weeks old. During this period the mother presents the appearance of a horrible, hairy nondescript monster. At the expiration of the four weeks these small creatures find homes for a time on the trees, shrubs and weeds. When old enough, they, too, dig caves and build turrets for themselves."

"You did not tell me anything about the young of the meadow spider," Jack remarked as they resumed their walk.

Morris paused with an exclamation of pleasure as he pointed to a small pear-shaped object that hung among the grasses at their feet. "That," he said, "is the egg-sac, or, as it is sometimes called, the cocoon of the meadow spider. The outside of the cocoon is tough and glazed. Not a particle of rain or snow can enter it. The inside is soft and

silken and contains several hundred eggs. It will remain here all winter and next spring the young spiders will hatch and immediately begin life for themselves. Spiders do not pass through the transformations that the higher orders of insects do. You perhaps know that there are some that begin life as grubs and after a while change into pupae and finally become beetles. Others begin as caterpillars and end their existence as beautiful butterflies. But a spider is a spider from the beginning to the end of its days. However, it does change its coat several times before it attains its growth. Really, my spider friends seem to be exerting themselves for your especial benefit today. Look at this fence and see these curious little spiders with long silken filaments attached to their bodies. They are known as the ballooning or flying spiders."

While the boys were intently gazing at them, the little creatures began to rise in the air and soon after disappeared from sight.

"Who ever heard of flying spiders before?" laughed Jack.

"These gossamer threads which they spin enable them to fly," replied his friend. "They are so bouyant that they overcome the weight of the spider and enable it to rise and float upon the breeze. By gradually drawing in the floating threads until they are gathered into a tiny pellet they are enabled to descend. Sometimes a spider builds a bridge across a stream. She takes her station on a leaf or twig and emits a long thread which the wind carries across and entangles on some object on the opposite bank. The spider then draws her thread tight and runs across it, spinning another thread as she travels, which unites with the first and strengthens it. She makes several trips back and forth, adding a new cord each time, until she is sure her cable is strong enough to serve her purpose. A second foundation cable is then stretched in a similar way and the skillful little architect weaves her web between the two. The water-spider spins a cell or nest about the size of an acorn, which attaches itself to the water plants underneath the surface of the water. When first woven the nest is simply a flat empty sac with the mouth

downward. The spider goes to the surface and obtains a small quantity of air, which she carries to her nest. She continues doing this until the cell is filled with air. It then serves as her living-room, nursery and dining-room. She spins within it a tiny cocoon from which a hundred spiders emerge to spend their infancy in this cunning little home. The spider is a true philanthropist, being without reservation a friend to our race,

destroying millions of noxious insects and requiring from us no compensations for her labor."

"Well, well, here we are at home and no doubt you are tired of my long dissertation on spiderology," laughed Morris.

"Far from it, I have had a most profitable morning and shall never again see a spider without remembering how wise, skillful and industrious the little creatures really are."

CARRIE MAY ASHTON.

STRANGE FOOD.

The nests, which furnish the material for that celebrated delicacy of Chinese culinary art, bird's nest soup, are not the every-day affair of twigs, grass, leaves, etc., which we commonly associate with the name, but they are very remarkable and unique productions in the bird building line. The birds who make them are the two varieties of esculent swallows inhabiting the Sunda islands, Ceylon, Borneo, and Java.

They build close to the sides of cavernous cliffs, much after the fashion of the common swallow and her mud habitation. The nests are composed entirely of a sticky fluid secreted by two glands under the bird's tongue. These glands become greatly distended at the approach of building time, and give out their peculiar fluid upon the slightest pressure. The tongue acts like the spinnerets of the spider, and the feathered builder pressing this member against the rock which serves as a support, backs away a few paces and draws out a long, gummy thread, which dries and hardens rapidly. This she forms into a sort of web by turning her head from side to side, thus making the undulating lines that appear in these curious structures. The nest, when completed, resembles in shape and

size a hen's egg quartered lengthwise.

The gathering of these nests is a regular industry, but also one of great difficulty and danger. The men undertaking it usually dwell in one of the caves. Their method of work is to fix a rattan ladder to the end of a long pole and wedge it against the rock. Two men then climb the ladder, one carrying a four-pronged spear with a lighted candle fixed a few inches below the prongs. By the light of this candle a suitable nest is selected, and transfixed with the prongs. A slight twist then detaches it unbroken from the rock. The spear is now withdrawn until its head is within reach of the second man, who deftly removes the nest from the prong point and drops it into a pouch tied about his waist. The nests of best quality are bound in packages with strips of rattan while those of inferior grade are simply strung together. Many caves in the north of Borneo have been worked for generations without any apparent diminution in their yield. Three crops are taken in a year.

The Chinese, who are the only ones who use these nests for food, buy the whole supply, perhaps about twenty-five tons annually, at prices ranging from five to thirty-five dollars per pound.

LOUISE JAMISON.

A MUSICALE. (IN CONNECTICUT.)

The catbird swings on a supple green withe
Gurgling songs brimful of good cheer;
Calling out now and then to some friendly myth,
"Come here! Oh, Toby! Come here!"
The martin and bluebird and little wren bright,
With selfishness sad to be told,
Are waging a war to decide who the right
To a nest in the bird-house shall hold.

The flicker is rattling his sharp, rousing call;
Song sparrow and phœbe reply;
The meadow-lark warbles, and over the wall
Flits the chippy with faint little cry.
The nervous brown chewink repeats his two notes;
The wood-thrushes add their sweet trills,
While a chorus falls gushing from gay blackbirds' throats
Like the music of frolicsome rills.

Swiftly the swallows skim by on soft wings,
Circling wide in their billowy flight,
Low, low o'er the reeds where the bobolink sings,
Then swift rising, they're lost in the light.
On a sudden the west wind springs wanton and wild,
And drives a bright cloud straight along,
Till black anger o'ershadows its loveliness mild
And a rain of tears falls on the throng.

Ah, then what a tumult of jubilant sound
Fills the air from fair earth to the sky!
As if each winged creature a new song had found,
And would fain waft it quickly on high.
And mingling softly with bird-notes and rain
Comes an echo from swamplands and bogs;
Fairy sleighbells are tinkling a silvery refrain—
Sweet and clear chimes the peeping of frogs.

The tuneful robin, whose lay like a hymn
Saluted the great rising sun,
Will intone a vesper when the light's growing dim,
Lamenting the day that is done.
And just before moon-rise we pause with a thrill,
And listen intently to hear
The sweet plaintive cry of the sad whip-poor-will,
Calling forth now a smile, now a tear.

—MARIA M. ALLYN.



FROM COL. J. B. PARKER, JR.

RED-BREASTED MERGANSER.
(*Mergus americanus*)

COPYRIGHT 1900, BY A. W. MUMFORD, CHICAGO

THE RED-BREASTED MERGANSER.

(*Merganser serrator.*)

The three mergansers, the Red-breasted, American and hooded, are generally known as fish ducks, sheldrakes or saw-bills. They frequent swift running streams and ponds and lakes, where they feed almost exclusively upon fish, which they pursue and capture under water. Their bills are hooked and deeply notched on either side, forming what might be called prongs or teeth, and their barbed like edges are especially adapted for catching and holding the fish which the birds bring to the surface before swallowing.

The legs of the all fish ducks are placed far back on the body, enabling their owners to outswim the other water fowls of their class. They frequently rest upon logs and the stumps of trees which are found in or near the water. The hooded merganser is the only saw-bill whose flesh is at all palatable, and unfortunately they are the handsomest of the tribe; the males rivaling the wood and harlequin ducks in beauty. However, their fine appearance is against them, for they not only fall as victims of the sportsman, but they are also continually sought by the taxidermist and plume hunter, consequently these species are constantly becoming scarcer.

The Red-breasted Merganser inhabits Europe, Asia and America, breeding on the British Isles, Iceland, Greenland, Labrador, Alaska and the Magdalen and other islands in the North Atlantic. During the fall, winter and spring months they frequent the waters of northern Illinois and Indiana. In March and April the Red-Breasted Mergansers resort to the lagoons of Lincoln Park, Chicago, and feast upon the minnows

and other fish, exhibiting at times but little fear of human beings. The bold, venturesome gulls lurk about the lagoons and when a Merganser arises to the surface with his prize a gull swoops down and in the twinkling of an eye robs the duck of his morsel. They are such voracious eaters that not infrequently they have to disgorge some of the food before they can rise from the water.

Among brushwood, bowlders and grass near the water's edge, often on islands, the female Merganser constructs a bulky nest of grass, leaves and stems, which she lines with a moderate quantity of down and feathers. From six to twelve eggs are laid. Their color is dark drab, with a greenish or reddish tinge; the latter shade lends a warm color to the shell. The eggs are elliptical in shape and in size average 2.50 inches long by 1.70 inches wide. The beautiful male Merganser deserts his mate during the period of incubation and while she is performing the nursery duties of caring for the young brood. To obtain food for himself seems to be his only ambition. His mate, however, has the true instincts of a mother and gives her eggs and young the most careful attention. Mr. Chamberlin says: "I paddled after a brood one hot summer's day and though several times they were almost within reach of my landing net they eluded every effort to capture them. Throughout the chase the mother kept close to the young birds, and several times swam across the bow of the canoe in her efforts to draw my attention from the brood and to offer herself as a sacrifice for their escape."

GERARD ALAN ABBOTT.

THE BEACH AT CORONADO, CALIFORNIA.

The morning dawned bright and beautiful; the sky had cleared from the rain of the day before, and the sun was shining joyously.

All the poetry and romance in our souls seems to bubble upward, when upon this June-like January day, our party starts out for a ride or jaunt along the beach.

We ride lazily on through the little city, down through a long, broad avenue, beneath the sylvan arches of the pepper trees, past cottages, surrounded by variegated gardens, cypress hedges and green lawns.

There are long avenues of palm, fig, cypress, acacia, pepper and eucalyptus trees. At the end of each avenue a glint of foam shows where the bay and ocean meet the shore.

Here and there the eucalyptus or Australian gum trees, display their stately trunks and long, blue, shapely leaves. They stand out alone in their princely glory towering with a lofty air far above all, and when their leaves are swaying gently in the breeze, they present a sight of rare beauty and imposing dignity. The palms so tropical in appearance, with their broad, flat tops and intensely green spike-like foliage, stand in long rows. The bushy topped green pepper trees, with their gracefully plumed drooping branches, lift their circles of glory, consisting of creamy blossoms and long clusters of crimson berries.

Guided by the deep roar of the surf, we turn our eyes toward the west, and the full grandeur of the Pacific Ocean is before us. Now we catch full breezes from the sea, and our party becomes radiant with buoyancy. We watch with interest the great waves as they roll in one after another and dash musically along the sandy beach, sending their spray up into the air, which falling, looks like silver.

There is life and beauty in the scene before us. There lies the great ocean

with the sunbeams dancing over the rippling waters. Off there, the white caps dash to and fro, making us think of balls of snow. Sometimes the rainbow colors play through the bubbles, and the gleaming white dazzles our eyes.

Occasionally a fish jumps above the surface of the water and once in a while a flock of sea fowl sport upon its bosom, while the long-billed road-runner stalks along the shore through the ice plant, and vast numbers of quail nestle in the small bushes a short distance away.

There is a mild and solemn beauty in the shifting scene which appeals to the imagination with special strength when the cool of the morning light or the warmer glow of the evening imparts the colors of the atmosphere to the glassy waters.

On Coronado we behold the glory of the great Pacific. With the roar of the old ocean in our ears, we sit and dreamily listen to what the waves tell us. Could they but tell of the scenes they have witnessed? Ah! but they do speak, when we lend our ears to their musical whispers. They tell of strange things, old wrecks, foreign lands, seaweed, kelp, shells, whales, weather beaten sailors, of storms, adventures, danger, of old times years ago when the tides came and went as they do now, but when no vessels found their way through the channel, when there was no San Diego, when no cottages breasted the sea on Coronado, and no sound broke the solitude of this dreamy land.

Old ocean has a particular interest of its own. It is the great highway of the world, something the whole of which cannot be seen, and at all times and in all places it produces a singularly impressive scene of mystery, irresistible power and grandeur; but in no other place does it present a more stirring picture of animation and it must appeal to the imagination of every one. Oh! the glory of the view! To the west, a broad grand

stretch of tumultuous sea, of billowy ridges, of emerald green waves rolling in full force and extending on and on to the remote horizon. Gazing upon it, and then up to the clear blue sky above, one's soul is filled with fond, gentle feelings, and one's heart swells with gratitude to the great Author of all beauty. The eye delightedly watches with spell-bound fascination the sparkle and marvelous grace of motion, the swing and swirl of the glittering green and white breakers which are continually foaming, roaring and thundering upon the beach. They are surpassingly lovely, a specimen of the splendor of water at its finest. As we watch the grand spectacle of the tremendous mass of waves rushing with eager impetuosity, turning over in faultless curves, they look like a mighty army come to conquer the world, and we try to imagine for how many centuries they have been dashing with never ending fury against the beach.

The line of the first breaker can be

discerned dreamily lapping the sands, spreading a sheet of curling, creamy wavelets glimmering with rain-bow tints, away up the beach.

The breaker following comes frothing along amid loud clamor and tumult, and with a long snowy plunge, hurls itself upon the beach into a mist of brilliant tiny waves.

But the third breaker is superbly grand. With what solemnity of motion that towering wave comes sweeping in. There it is, piled up high like a huge massive wall. Ah! out of yon green mass, a streak of silver-crested foam darts forth. Suddenly it leaps forward, rolling higher as it rolls nearer as if stimulated by some hidden spell; then over it tumbles, falling with a long roar which reverberates with an angry howl all along the sands, and a wild chaos of eager, dancing, foaming, tossing, racing, heaving, white billows, rush with frantic haste and violence, hither and thither, round and round in unspeakable confusion.

CLARA HILL.

RE-VISITED.

Pink with the pale erigeron's bloom
I saw the old home mead in June;
And buttercups of brightest gold
Starred all the hollows as of old!

The cockspur thorn its clusters hung
As purely white where thrushes sung;
The splendid hickories towered still
Beneath the shadows of the hill.

On mossy seat I sat me down
And, dreaming, viewed the distant town—
A tortoise waddling slowly by
At length recalled my wand'ring eye,

And woke sweet mem'ries of the days
When Eden pure seemed woodland ways,
And all these scenes, with tenants shy,—
Vale, hill and mount, brook, marsh and sky—
With home,—the central picture fair,—
Were mine, and I without a care!

—GEORGE BANCROFT GRIFFITH.

THE COMMON OR WILSON'S TERN.

(*Sterna hirundo*.)

Whether flirting, nesting, hunting, or flying at leisure, there is a refreshing joyousness about the Tern that makes it a delight to watch.—Neltje Blanchan, "Birds that Hunt and are Hunted."

They who have never had the pleasure of visiting a locality which is frequented by the Terns have missed one of the most beautiful and pleasing scenes in nature. Truly that one whose fortune it is to daily watch the graceful motions of this swallow of the sea, as it flies over the billowy water—at work or at play—will say with Bret Harte,—

Sauntering hither on listless wings,
Careless vagabond of the sea,
Little thou heedest the surf that sings,
The bar that thunders, the shale that rings,—
Give me to keep thy company.

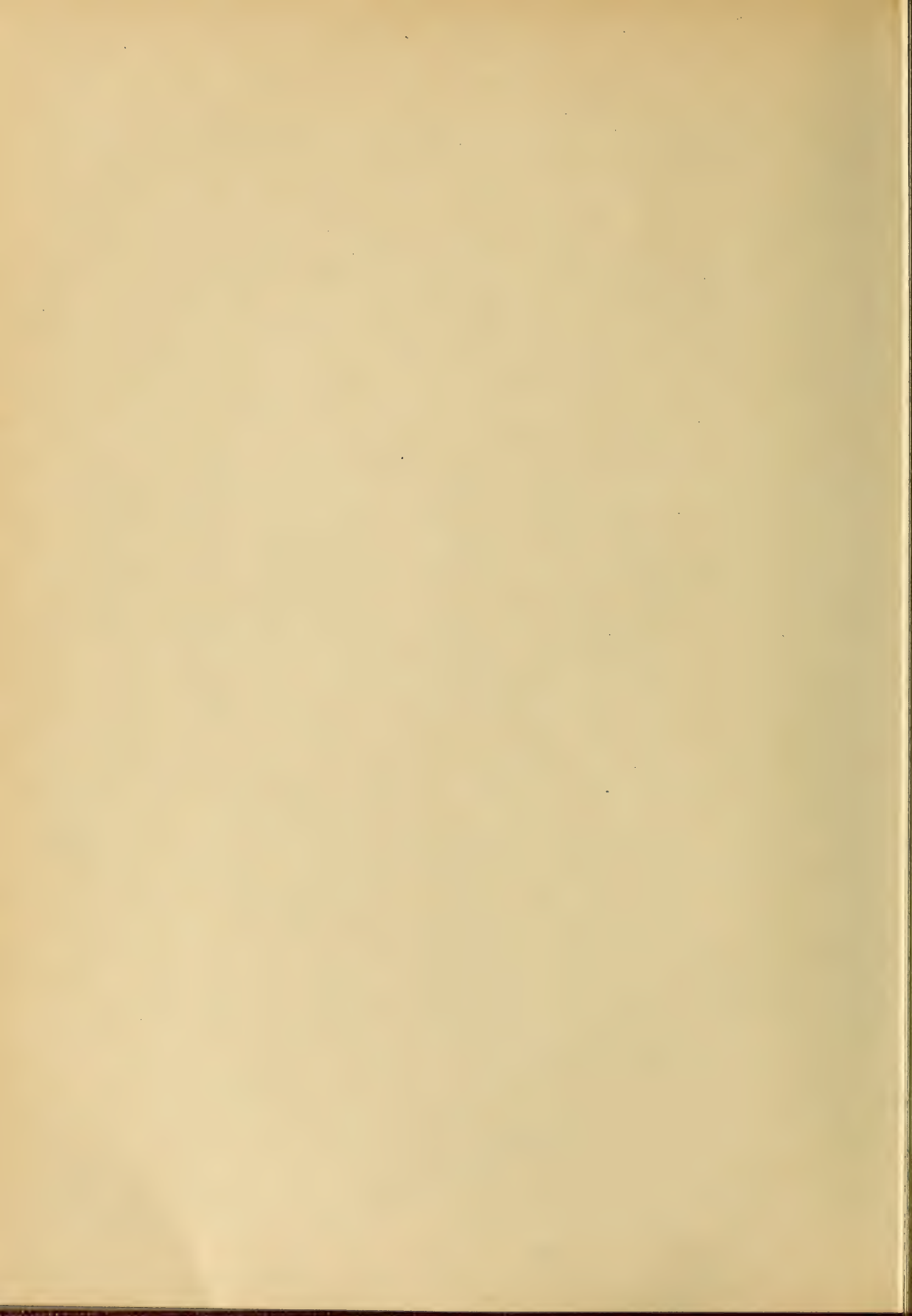
The joyous abandon shown by the Tern at all times is delightfully refreshing. Nothing is more attractive than its motions as it alights. Approaching a resting place, its long and tapering wings are held for an instant fluttering and vertically over its back as it daintily comes to rest, either on the land or on the water. Neltje Blanchan has well expressed one of its sprightly habits. "In the very excess of good spirits one will plunge beneath the water after a little fish, then, mounting into the air again, it will deliberately drop it from its bill for another Tern to dash after, and the new possessor will toss it to still another member of the jolly flock, and so keep up the game until the fish is finally swallowed." The Terns do not often indulge in this pastime, but when they do, they seem a jolly crowd. Some have suggested that this game of drop and catch is entered into by the birds in order to kill the fish.

Wilson's Tern has a wide distribution. It is found throughout the greater part of the Northern Hemisphere and in Africa. In our own country it chiefly frequents that region lying east of the plains, though it is also at least a winter resident on the coast of southern Cali-

fornia. Its breeding range extends intermittently from the Arctic coast to Florida and Texas. This beautiful bird bears a number of popular names. Besides those already mentioned, it is called Summer Gull, Mackerel Gull and Red-shank. Though it is frequently called Sea Swallow, its flight has not the sailing and rapid character of the true swallows, the wings being moved more slowly, although their endurance and power of flight are extraordinary.

Many of the islands on the Atlantic coast harbor large numbers of Wilson's Terns. Gull Island, situated at the upper end of Long Island Sound, is one of their notable resorts. "Here they breed by thousands, fairly filling the air when you land and disturb them. Their nests are always placed on the ground or rocks, and are usually composed of a few pieces of grass and seaweed. They place their nests all over the island above high-water line; on the beach, on the sides of the bluffs—all around and in the garden cultivated by the lighthouse keeper." Regarding the habits of the Terns on Great Gull Island, Mr. Dutcher says: "The Terns were very jealous of any intruders, no matter who they were. The angry birds would congregate in one large flock directly above the object of their wrath and attempt to annoy him by every means in their power. They would scream at him, circle about him, circle around, then poise in the air, set their wings, and come down like a shot, as if to transfix him with their bills, then when within a few feet would suddenly open their wings and swerve off, only to repeat the performance again and again." They have come to fear man, however, and are inclined to keep out of the range of his gun, and it is only by shooting a Tern for a decoy that they can be brought





near. Then their habit of worrying over their own dead works to their destruction.

The young are fed for several weeks, until their wings are sufficiently developed to make them fully independent. Wilson says that when the birds are very young the parent alights on the ground and tears to pieces the fish which it has caught, feeding it to its young in fragments of a proper size for the little bird to swallow. Later on, the parent feeds them without alighting, and when the young are nearly ready to fly, it drops the fish among them and the most active of the flock usually gets the food. The young birds before they are entirely independent, however, also search for insects in the nearby marshes.

The female sits on the eggs only during the night or in wet and stormy weather. During the day, in pleasant weather, the heat of the sun usually furnishes sufficient warmth. Though not sitting on the nest during the daytime, the parents are usually not far away and are in sight of the nest. On the appearance of an intruder they exhibit great concern and, flying around, utter a hoarse cry in a very excited manner.

Dr. Dawson has written: "What a piece of work is a Tern! how gentle in instinct! how untrammelled in discussion! in form and moving how elegant and admirable! in action how like the swallow! in innocence how like the dove! the beauty of the air! the paragon of sea-birds!"

THE CROWS' WEDDING.

It was a day early in April. Joe, my brother, and I were out plowing the field, where we had been since early morning. The breath of spring was in the air, and I remember I could hardly wait until the noon hour when I should be at liberty to lie on my back and just drink in each little bit of awakening Nature.

At last it was twelve o'clock. I was hungry, yet I did not care to eat. I flung myself down under an old stone wall which acted as a buffer against the somewhat keen wind that was blowing, and there with my face turned up to the sky I lay, bathing my face in the struggling spring warmth of the sun.

High overhead the sky was the old intense blue, with here and there an island of woolly white clouds; they looked as if someone had tossed up fleecy, white shawls and they had hung there in the sky. The fresh earthy smell from the newly plowed field came to me—the truest odor of the world's returning life of which I know. I closed my eyes sleepily, deliciously giving myself up to every spring influence—to the timidly

tried love-song of a far-away robin, to the chatter of some gay little squirrels, and to the caw of a seeming multitude of crows. What a row they were making! And quite near they were, too.

I shoved myself up on my elbow and peered over the old wall.

"Joe," I exclaimed, "look here!"

Our astonished eyes beheld any quantity of crows, all formed in a long line, and making the most dreadful racket; then suddenly all was quiet and a huge old crow stepped out in front, and in crow language addressed the assembled crow colony.

When his speech was finished, a young crow walked out of the line and slowly and carefully began an inspection of the lady crows. At last he seemed to find one who met with his ideas of feminine beauty, and together they flew away. This little scene was repeated again and again, until all the crows had flown away in pairs in all directions of the compass.

We had stayed there watching them long past the hour allowed for dinner, and old Bob, the farm horse, was begin-

ning to think he was forgetting how to tell time by the sun, when we at last returned to the plowing.

"What do you think they were doing?" I asked of Joe, who prided himself on knowledge which came of his two added years.

"Why, 'twas a wedding, stupid! Couldn't you see that the old crow was the minister and that he married the young crows?"

In the years since I have never met but one man who had seen the same thing, and he was an old farmer in Vermont, and he agreed with Joe's idea that the event was a wedding.

Alas for childish ideas! As we grow older, Science, who steals our imagination, takes many things from us, and among the first, we learn that with civilization have come customs, forms, rites and ceremonies; the birds and the beasts know not the joys of birthday parties and wedding feasts.

So, although this is a true story, the name I have given it does not apply; but, as I have never been able to discover just what the old crow said to his little flock, I have clung to my first childish impression, and called it "The Crows' Wedding."

DOROTHY LORD MALTBY.

BACK TO THE WOODLANDS.

Back to the woodlands again I must go,
For I hear sweet Spring calling me there;
Back to the trees and the soft grass below
That waves in the light balmy air.

How can I tarry, how can I stay,
When I hear that voice calling to me?
I must off to the woods where the tiny birds play,
There I'm happy as happy can be.

I sit on the grass in the cool flitting breeze
That frolics around in delight;
I follow the paths on along through the trees
Till they lead me far on, out of sight.

Oh woods how I love thee, thy trees and thy brooks
And all the sweet things that I see!
How I'd like to live here in thy cool, shady nooks,
Where I'm happy as happy can be!

The birds overhead sing their songs bright and gay,
The stream murmurs on at my feet;
And all of my troubles and cares pass away,
To be replaced by thoughts good and sweet.

Oh! cities are beautiful, buildings are grand,
But God's woodlands are greater to me
With their trees and their flowers by summer winds fanned,
There I'm happy as happy can be.

—SAMUEL O. GILMAN.

DINGO.

One windy July morning fate threw Dingo, a tiny, half-fledged, terrified robin, together with fragments of a broken nest, upon our piazza roof. We climbed out of the window, laid the gasping little creature in a box of cotton and left him, hoping that the parent birds might come to the rescue, but after the destruction of their home in the elm tree they apparently left the neighborhood.

Presently Dingo recovered both his composure and appetite, and announced the latter fact with emphasis. Out we clambered again, and, our larder not being stocked with worms, proffered the little foundling bread and milk. He received it graciously, opening an appalling yellow cavity, down which we were obliged to poke the food before he would condescend to swallow it. Having eaten all we dared give him he sank back with an air of satisfaction, glancing up at us with a confiding twinkle of his black eyes.

That settled it: he became our tyrant, we his dutiful slaves. At intervals of fifteen or twenty minutes his piercing cry was heard, and his appetite was in proportion to the size of his throat. He thrived, grew, and developed the proper number of speckled feathers on a diet which consisted chiefly of bread, milk and berries. He was inordinately fond of milk, though that infantile beverage was certainly not on his native bill of fare. When he rebelled against an exclusively vegetarian menu we toiled vigorously with the hoe to provide angle-worms. As their every wriggle caused us anguish we felt that kindness to animals could no further go,—not speaking from the worms' point of view. I can see Dingo now, balanced uncertainly on the edge of his box, head tipped rakishly, pin-feathers waving, and a fat, squirming angleworm dangling from one corner of his bill. We drew the line at mincing them.

Our charge had various names bestowed upon him: "The Incubus," "Lord Roberts," and "Bobs," but the favorite was "Dingo," taken from Kipling's story of "Dingo grinning like a rat-trap, hungrier and hungrier."

Dingo left the box in a few days and was presented with a towel-rack for a perch. The first time he mounted it he promptly fell asleep and off the perch at the same moment, ignominiously spending the night on the floor. The next time, however, he was successful. He never showed the least fear of us, but apparently regarded a finger as especially designed by Providence as a perch for orphan robins, and, with his toes curled tightly around it, was satisfied to be carried all about the premises.

His days were spent on the window-sill in meditation, or in hopping about the piazza roof. Later he discovered the use of his wings and began to flutter short distances. One evening that I particularly remember he made an excursion to the edge of the roof and stood gazing into the sunset. His wings looked strangely like arms folded behind him, the feathers waving about his head made him seem ridiculously babyish, but his whole attitude expressed ambition, and he was evidently longing for the time when he could venture out into the great world. Altogether he was a pathetic little bunch of feathers and hope.

About this time I spent a night away from home. On my return I found an excited family waiting to tell a tale of woe. At twilight the evening before Dingo surprised them by raising his wings and sailing off to the nearest tree. As no blandishments could induce him to descend they were forced to leave him to his fate. In the small hours my friend was awakened by a screech-owl in the same tree. Horrid thought! No doubt it had come to devour our Dingo. She sprang up and leaned out of the window, crying, "Shoo! Go away!" at the imminent risk of arousing the neighborhood. The owl remained undisturbed, and even seemed to purr softly as though in enjoyment of a particularly choice morsel. My unhappy friend lay awake for some time, a prey to wrath and grief. At dawn, however, there on the sill sat Dingo, a returned prodigal, loudly demanding the fatted worm.

After this Dingo spent much of his time in the trees, returning at intervals

to be fed and petted. He called to us whenever we appeared, and it seemed odd enough to have a speaking acquaintance with a bird out of sight among the branches. Evidently, his feelings were deeply injured when we failed to bring his food to the tree-tops, and he expressed his opinion of our neglect in no measured terms. He came back less and less frequently, and one day all our calling brought no response. Instinct was too strong and he had taken his chances. Two or three days later we left home, and the house was closed.

In the autumn, my next door neighbor remarked to me: "I wonder what became of that robin of yours. He was calling around here all the while you were gone; at least I supposed it was he."

Poor, brave, confiding little Dingo! we shall never know how he fared. We can only hope

"That Being who has taken
Care for every living thing,
In summer, winter, fall and spring,"
took care of him.

ELIZABETH MILES DERRICKSON.

POISONOUS PLANTS.

It is singular that writers do not oftener mention the fact, when the plants described by them are of a poisonous nature. There is such widespread ignorance on the subject that more knowledge is greatly needed.

Especially is this the case with children, who should be protected from the effects of poisonous plants by a knowledge of their dangerous property, and at the same time have removed their fears of other plants, wholly innocent, but which are often regarded as dangerous. Thus I find that our beautiful five-leaved ivy, or Virginia creeper, *Ampelopsis quinquefolia*, is regarded as poisonous by many people who do not appear to distinguish between it and the very dissimilar three-leaved ivy, or poison oak, *Rhus radicans*. That it is a wild ivy seems to be sufficient to excite their fears.

Buttercups are said to be so poisonous as to inflame the skin of tender fingers, but I have never known of a case of the kind. But it is quite different with the plants of the parsley family, many of which are very poisonous. How often we hear of people being poisoned, sometimes fatally, with fool's parsley, or its close relatives the water parsley, water hemlock, poison hemlock, etc.

The white hellebore, *Veratrum viride*, is another poisonous plant common in our woods. Then there are the different

varieties of larkspur, of which there are said to be over twenty-five species native to the United States, and which are more or less poisonous in character.

The common corn cockle, *Agrostemma githago*, has been known to produce fatal poisoning, but this is usually caused by eating food made from flour containing the cockle seed.

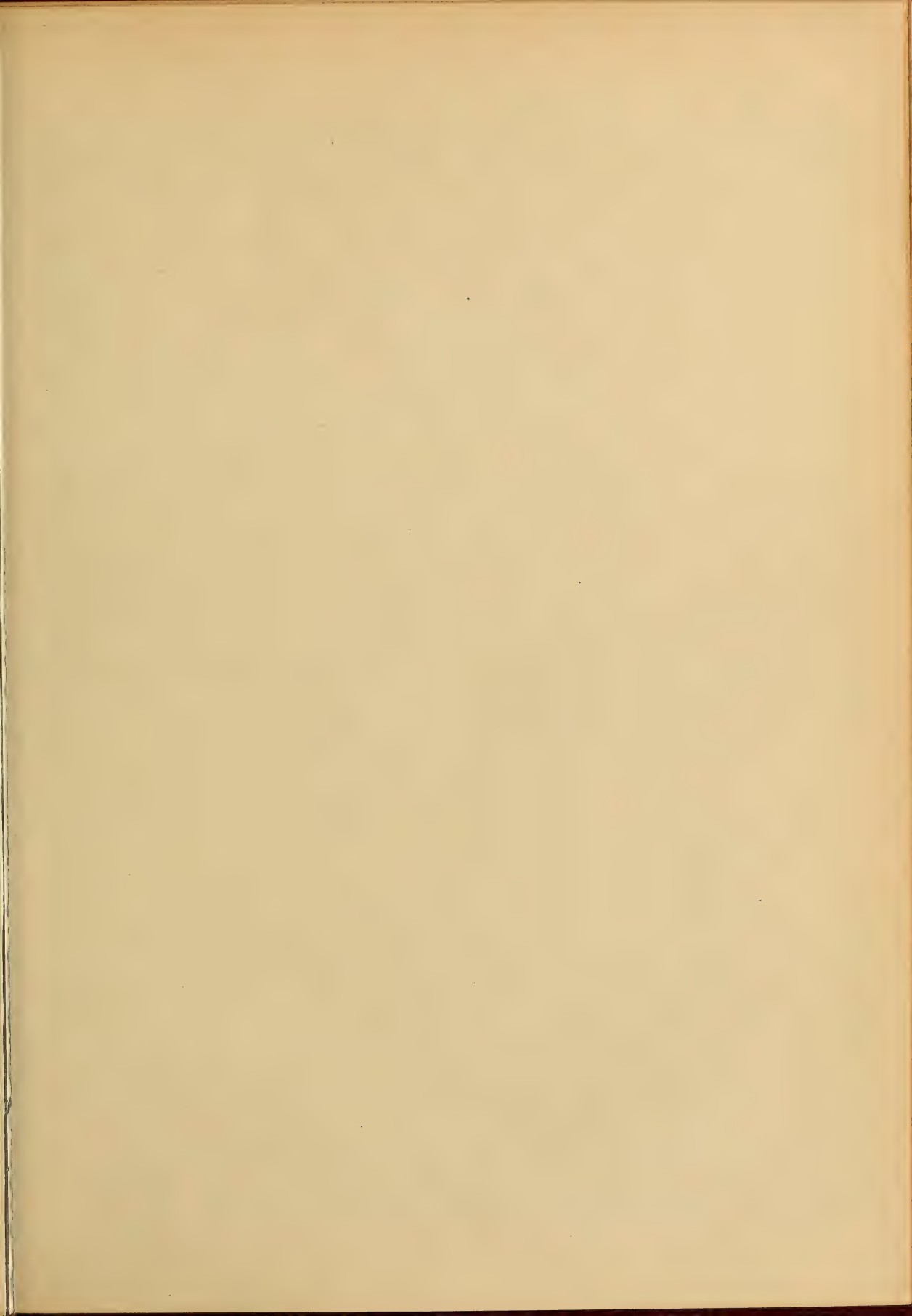
The wild black cherry, *Prunus serotina*, though a valuable tree and fruit, has been known to poison cattle by their having eaten the wilted leaves; and children have been fatally poisoned by swallowing the fruit whole, and by eating the kernels of the seeds.

The rank and ill-smelling Jimson weed, *Datura stramonium*, is very poisonous, and several cases of poisoning by it have been reported, though the rank, disagreeable odor one would suppose would be sufficient to prevent any one from handling it unnecessarily.

The nuts of the horse-chestnut, or buckeye, are poisonous, as are also the berries of the bittersweet, and wild bryony.

Among other poisonous plants may be mentioned pokeweed, rattlebox or wild pea, spurge, snow on the mountain, the laurels, nightshade, sneezewort, water dropwort, and the seeds of the laburnum and the catalpa tree, and of the yellow and the rough-podded vetches.

ELMA IONA LOCKE.





FROM COL. CHI. ACAD. SCIENCES.

AMERICAN WOODCOCK,
(*Philohela minor*).

About a Foot long.

COPYRIGHT 1905, BY A. W. MUMFORD, CHICAGO

THE AMERICAN WOODCOCK.

(*Philohela minor.*)

The Woodcock is the most notable of game birds. "It is a game bird *par excellence*." It may also be called the "owl among snipes," for it feeds during the night hours and never flies during the day unless forced to do so by some intruder on its domain. During the daylight hours it remains quietly in the depths of marshy thickets or in fields of rank grass. Its range covers the whole of eastern North America from the British Provinces southward to the Gulf of Mexico. It breeds more or less commonly throughout its range, and in the winter passes southward only as far as the regions of non-frozen earth. This migration is necessary, for the Woodcock seeks its food in the soft earth of marshy grounds and wet meadows.

The Woodcock's method of obtaining its food has given it the rather uncouth name, Bog-sucker. Its chief diet consists of earthworms, which are obtained by pushing nearly or quite the whole length of its bill into the soft earth. Whether the bird locates the worm by the sense of smell or by some kind of instinct is not known. It does, however, obtain a large number of angleworms during a single night, and it would hardly seem possible to do this were its bill-thrusts made at random. The tip of the bill is large and sensitive, and the end of the upper mandible is capable of action which is quite independent of that of lower. This characteristic is of great

assistance to the bird in seizing the worm and in extracting it from the earth. Its eyes are large and set far back on the head where they would be of little service in its search for food, but are very useful in detecting a distant enemy. Late in the season, when the ground of its favorite resorts is dried, the Woodcock seeks new pastures on the banks of streams, timbered hillsides, grassy meadows and even cornfields. Here it hunts for insect food under fallen leaves or under clods of earth. "When surprised, the Woodcock rises perpendicularly to the tops of surrounding bushes, then makes off at an angle with a rather weak, unsteady flight, only to drop quickly to cover and run rapidly along the ground and out of sight."

When under the cover of underbrush and among the dried leaves, the Woodcock is seen with difficulty, for their colors harmonize perfectly with their environment. It nests on the ground, the eggs being laid upon a mass of leaves very loosely thrown together. Though the young desert the nest as soon as hatched, they remain with their mother and are cared for by her for about four weeks. The parent is very solicitous for their welfare. It is said by reliable observers that when she suspects the presence of danger, she will remove the young to a place of safety by carrying them, one at a time, clasped between her thighs.

THE PASSING OF THE WOODCOCK

Some time ago the United States Department of Agriculture issued a pamphlet in which it was stated that the Woodcock is one of our vanishing birds. It is to be hoped that the result of this publication, as well as other efforts to keep the conditions before the public, will help avert such an undesirable result.

Should the Woodcock disappear, he

would not be greatly missed by the general public, for he is a bird that does not cut much figure in the general consciousness. He is not a part of our scenery as the robin and bluebird (and house-sparrow) are, and he would not leave a lonesome silence behind him—a feeling of something missing from the summer air, as would be experienced if the quail

ceased piping from the stubble-field, or the roll-call of the partridge came no longer from the woods. The Woodcock is perhaps the most unobtrusive member of our bird-fauna. His comings and goings are in the night, and his stations are in the low swampy grounds in the forest among the *conocephalus* and skunk cabbage and dainty fern. Even if a visit to his haunts shows nothing to be distinguished from a brown leaf or chunk, until a whistling projectile is thrown through the air from near one's feet, but a little farther on.

His nest is as inconspicuous as he is, simply a hollow in the leaves and four rather large eggs so colored as to be almost indistinguishable from the background. They are four in number, and I have never found them except with the pointed ends toward the center of the nest. His youngsters, too, are so much like the surrounding leaves of the forest-floor that it makes little difference whether they hide behind one of them or in front of it.

Perhaps the most conspicuous thing about the Woodcock's premises, more showy than birds, or nest, or young, are his borings in the rich black earth where he has stuck down his bill to feel for worms. I have heard one farmer say "he'd heard they get their nourishment directly from the ground," though I cannot say how widely the notion has spread.

As things now exist, there are particular and special reasons why the Woodcock should have a difficult time of it to escape extinction. As he does not stay with us in the northern states the year round, I believe there is in many of the states no law protecting him at all, so that the sportsman has a whack at him (or several) every time he sees him. And the Woodcock's own way of doing things is much to his disadvantage. His way of getting up and going is the most tantalizing way possible of saying to the man with the gun, "give you leave," and most sportsmen, though they had mentally resolved to let the Woodcock alone this trip, would likely pull up and blaze away by reflex action before they had time to think. On the whole the Woodcock is not so hard to hit, especially with a scattering shotgun, as he seems; for the whistling of his wings enables one to

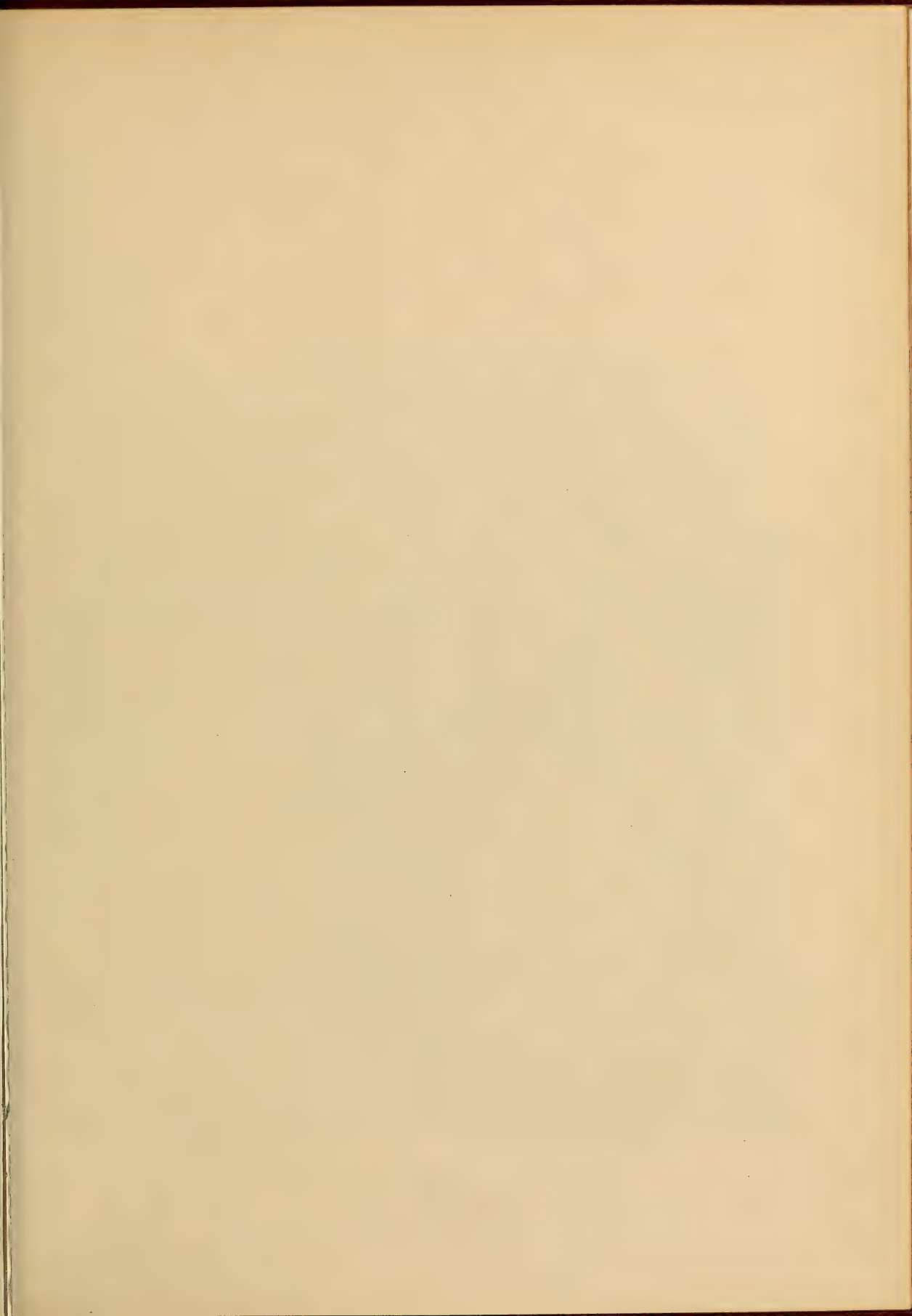
shoot by ear as well as by sight, and it is possible that when these two senses complement each other, the hearing may help more than we generally suppose. Again, the Woodcock does not fly far, and can easily be found again, and he is willing to "give you leave" as many times as you want, and there are hunters who will follow up the game. Perhaps it would help matters if the hunters would carry a rifle and promise to be content with only one shot. It is almost wrong to tell what a delectable morsel the bird is, juicy, rich, and of a gamy flavor, but it is a food we can get along very well without.

To the naturalist, the complete extinction of any creature whatever, even the most insignificant or harmful, is looked upon as a calamity, for that means cutting out forever all future investigations of relationships and habits, and a thousand questions that the world, having grappled with so far unsuccessfully, is anxious to hand over to succeeding and increasingly better equipped and wiser generations. And in habits and relationships our Woodcock is by no means the least interesting of our animals. Most of his relatives cling to the shore, but he goes far into the wooded swamps.

The Woodcock's aerial dance and song is one of the events of the year, and though it is pretty well known about by naturalists, it is surprising to observe how few people have ever observed it. It was, after all, a particularly fine stroke of Emerson's when he mentioned as one of the rare treats that come to the forest seer, that "He heard the Woodcock's evening hymn." Too many of our naturalists, it is to be feared, have been content with the daytime, and have unwisely handed over the gloaming to the people who go two-by-two, and so missed some of the finest that happen out of doors—the Woodcock's wooing, and the ways of the little people of the dusk; the flutter of owl and bat; the sailing of the flying-squirrel and scamper of the wee wood mice.

Perhaps no other of our birds take such especial care of their young as the Woodcock, which, clasping the young between its feet, rises and flies with it to the feeding-grounds.

H. WALTON CLARK.





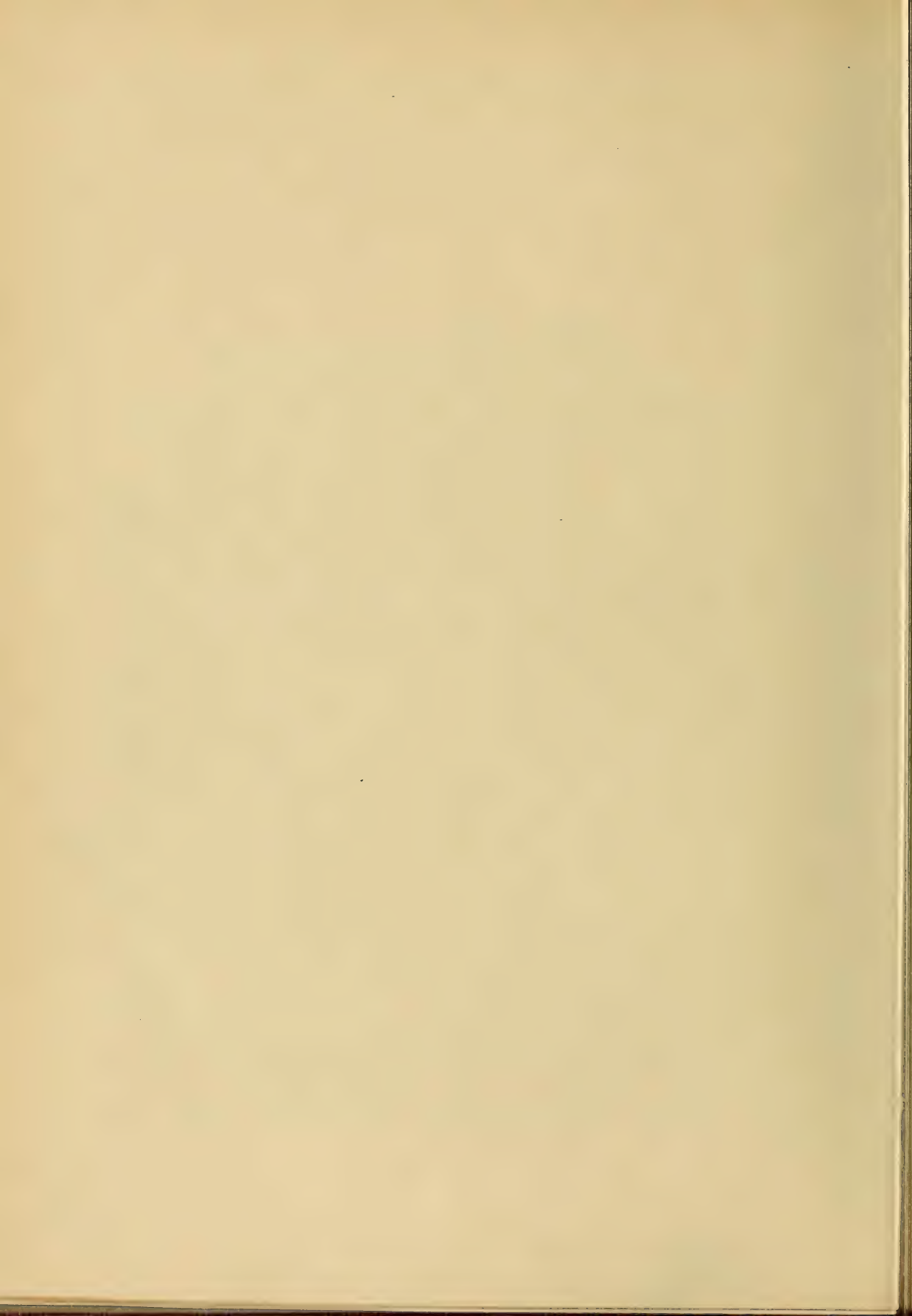
A. W. Mumford, Chicago

WHITE OAK



A. W. Mumford, Chicago

BASSWOOD



THE BROODING WOODCOCK AS I SAW HER.

Some thirty years ago, during my schoolboy days, my father was clearing a strip of brushy woods on the southeast corner of his farm in Mercer County, Ohio.

When our winter school had closed, late in March, father took my brother and me to help in the clearing. It was joined on the north end by a low wet woodland. Through this ran a stream, then a favorite place for wild ducks and other birds which frequent water courses. The south part of the clearing was a rich knoll, where we began the clearing and continued working toward the north end. A wood-road ran from the wet woods on the north the entire length of the strip, and there was a little rise of ground from this road about half way between the ends of the strip.

One morning in April, as we were going along this wood-road to our work, we flushed a female Woodcock from her nest on the rise of ground. This was a great pleasure to me, for it gave me a chance to study this interesting bird at close quarters, and it was the only time I ever found its nest, saw its eggs or its young.

The nest was placed at the foot of a small wild plum-bush, which grew on a small hillock. It was only a slight hollow scratched out by the bird and was lined with leaves. There were four eggs in the nest, large at one end, small at the other. The ground color was a dirty white greatly mottled with brown and much darker at the larger end. They much resembled the eggs of the killdeer, only they were larger. They were arranged with the points to the center of the nest. The female was sitting when we found her, and, although the nest was not more than six feet from the wagon-road, she seldom flew off her nest as we passed. She soon became accustomed to our passing and for about two weeks we enjoyed looking for her. She was almost identical in color with the brown leaves, but from the position of the nest near

the small bush we knew exactly where to look for her, or it would have been difficult to see her at all. There was one peculiarity about her position on the nest, she invariably faced the south, which was opposite her feeding ground. She presented a beautiful picture to a lover of nature, her rich brown plumage being delicately penciled; her small head well drawn back and settled in her feathers, and with her long bill almost hidden in her full round breast. The most noticeable thing was her bright eyes, which were ever alert and took in everything around her with no effort on her part. There was nothing to obstruct the view from the wagon-track and I have often thought what an opportunity that was for a perfect picture, had it been in the days of the camera, yet the picture is still vivid in my mind.

One morning we passed and as usual looked for the bird. She was not there. The nest was empty, but on looking round, a few feet from the nest, the mother bird suddenly began to crawl away, flapping her wings in that deceptive way and doing everything in her power to attract us from her family. We had been waiting too long to see the little folks to be thus diverted, and on closely scrutinizing the spot from which she started we found, lying on the leaves, the four little chicks, which must have hatched during the previous night and were already beginning their short trip to their feeding grounds in the nearby swampy brushwood. They were interesting little fluffy brown things, with two bars of a lighter shade running down their backs, very much like the young of the small brown bantam chickens. Their little eyes shone like black beads, and their long bills were out of all proportion to the size of the little chicks, which seemed puzzled to know what they should do with them. But we presume they soon learned, for we only had this one study of them and never saw them again.

JOHN F. STRETE.

THE WHITE-BREASTED NUTHATCH.

(*Sitta carolinensis*.)

Come, busy Nuthatch, with your awl,
But never mind your notes,
Unless you've dropped your nasal chords
And tuned your husky throats.
—Ella Gilbert Ives, "Robin's Thanksgiving Proclamation."

To those persons who reside in regions where snow storms and cold prevail during the winter, it is indeed most gratifying that some of the birds do not migrate, but remain through these gloomy and cheerless months. Even the despised English sparrow gives pleasure by its presence in our door-yards, and we have a feeling of companionship for it as it snugs cozily in some protected nook of our warmed home, and then, how delighted these birds are when spring comes! They begin singing and we delight in the return of warmer days and the opening of the buds. Even the busy White-breasted Nuthatch, which would seem to have been always too busy to practice a song, cannot resist the invigorating influence of returning spring and attempts a song. This song, if it may be so called, consists of simple syllables which Dr. Dawson expresses by the following sounds: *Tew, tew, tew, tew, tew*. These notes do not lack a musical quality. They are uttered in a high and penetrating voice and their carrying power seems greatly out of proportion to the size of the bird.

The White-breasted Nuthatch is a constant resident throughout nearly all of its geographical range, which covers eastern North America from the Gulf of Mexico, north to British America, and westward to the Rocky Mountains. It is easily identified by its acrobatic appearance, as it travels in any direction upon the tree trunk in its search for insect food; by the black and bluish-gray colors of the plumage of the upper parts; by the pure white of the plumage of the underside of the body, and by its peculiar nasal yank, or more frequently a twittering

note, both uttered as the bird creeps along the tree. The notes are uttered, no matter what the position of the bird may be. Its voice is just as clear and loud when running down a tree trunk as it is when progressing upward. The White-breasted Nuthatch is easy to identify, for it "assumes attitudes no bird outside his family would think of attempting."

The Nuthatch is always busy. It is not so actively engaged, however, but that a few moments can be spared in which to carefully examine an intruder. While an inquisitive bird, it is not excitable and looks at one with a calm demeanor that would indicate but little fear.

With the other members of its family, the White-breasted Nuthatch has the habit of wedging nuts, and sometimes grains of corn, into crevices of the bark and then hatching them with strong and rapid blows of its sharp bill. It hammers the nuts to pieces, not for the purpose of eating the softer parts, but rather to obtain the insect larva that may be hidden within. It searches diligently under the scaly bark, among the lichens and in the crevices for small insects, larvae and insect eggs which may be hidden there. Always searching through the daylight hours, during winter or summer, rain or shine, this interesting bird performs a service to the horticulturist the value of which cannot be estimated. With its near relatives it destroys a vast number of insects that are not captured by other birds.

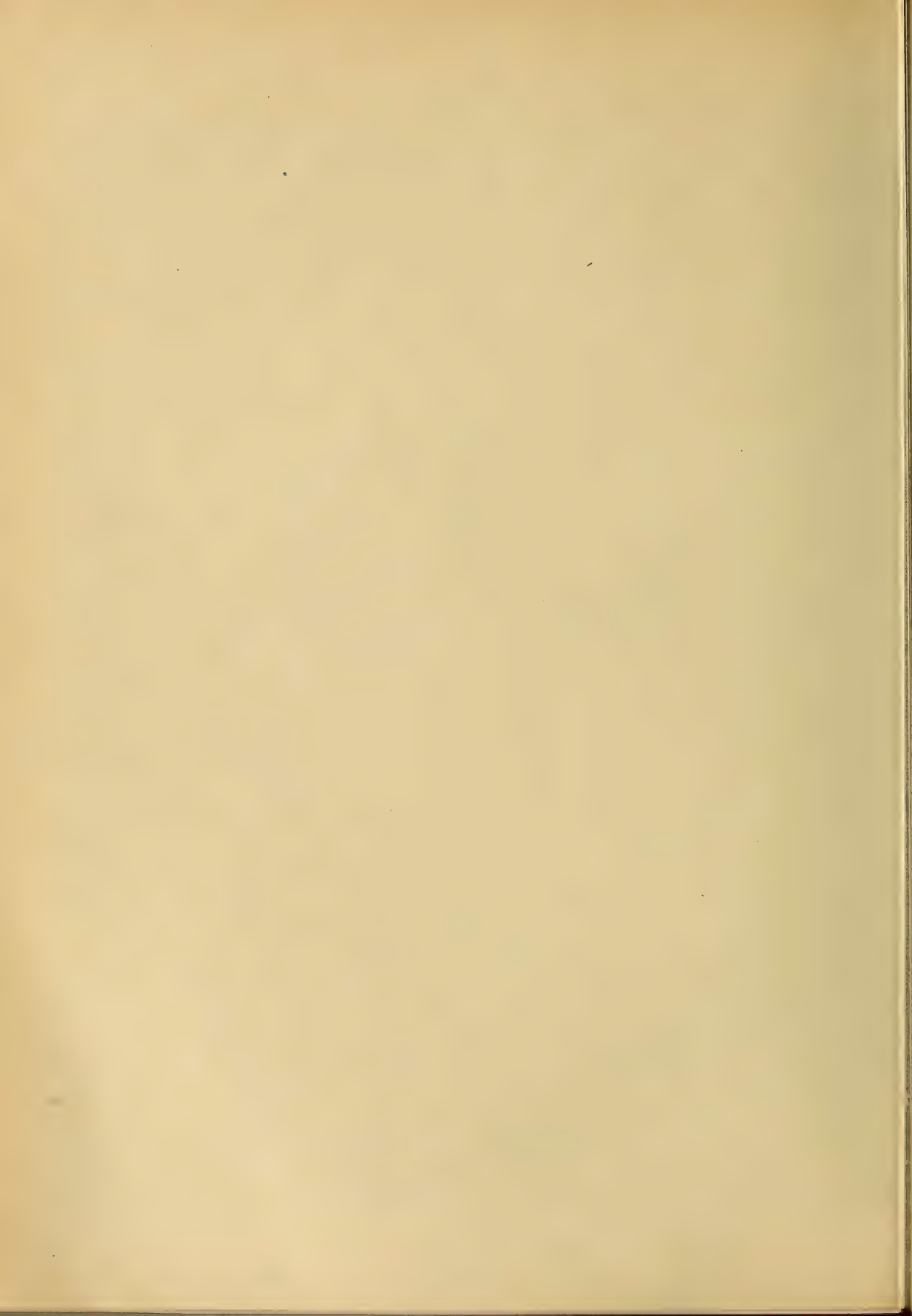
The White-Breasted Nuthatches are devoted parents and during the nesting season rarely go far from their home.



FROM COL. F. M. WOODRUFF.

WHITE-BREASTED NUTHATCH
(*Sitta carolinensis*).
Life-size.

COPYRIGHT 1900, BY A. W. MUMFORD, CHICAGO



The male shows a wonderful devotion to his mate, constantly feeding her during the period of incubation. He also assists her in the care of their large family, for the number of young varies from five to ten. During this period they are far too busy to care for society and it is only during the colder months, when family cares no longer hold them, that they seek the companionship of their fellows and other birds.

The nest of this Nuthatch is usually placed in a cavity excavated by the birds in a tree, at a considerable height from the ground. The laborious work of chiseling the excavation is shared by both sexes. The cavity is prepared for the reception of the eggs by a copious

lining of feathers, moss, fur and other soft substances that will form a soft bed. Through the opening of the nest-cavity the young birds pass quite early in their lives and spend a few days creeping over the home-tree before they attempt to fly.

Dr. Dawson has well described the general appearance of this Nuthatch. He says: "Nuthatch is the acknowledged acrobat of the woods—not that he acts for display; it is all business with him. A tree is a complete gymnasium in itself, and this bird is the master of it all. Top side, bottom side, inside, outside—this bird is there, fearless, confident; in fact, he rather prefers traveling head downward, especially on the main trunk route."

HONEYSUCKLE.

"Pretty Honeysuckle, come and play with me;
We'll go skipping, dancing o'er the grassy lea."

"Nay, my little maiden, I must stay at home.
If my work I'd finish, I've no time to roam."

"Why! you Honeysuckle, have you aught to do?
Others stand here idle in the spot they grew."

"Yes, my little maiden, do not pluck me, pray;
Picking will but kill me. God wills I shall stay."

"Tell me, Honeysuckle, what work's given to you?
Do you find it pleasant out in rain and dew?"

"That, dear little maiden, only helps me grow.
I must throw out fragrance and my beauty show."

"Humming-birds and insects crave my nectar sweet;
Workmen busy for them mix my dainty treat.
Beauty spots and sweet airs give the world a charm;
Then I've green seed babies I must keep from harm."

"In my heart they're tight locked,—their life just begun,
Berries grow and redden ere my work is done."

So, dear little maiden, here I'll nod and play;
You may visit with me through my life each day.
To the fields and meadows other flowers are sent;
While my brief life lingers, here I'll stay content."

—LOVEDAY ALMIRA NELSON.

THE AUNT JANE STORIES.

VI. THE BLESSED BEES.

"The larks and finches twitter all around,
And o'er the fountain swings the golden bees."
—Theocritus.

"Aunt Jane, do please come out to the apiary, and sit under the dwarf pear tree while you tell us all about bees," pleaded the children, one beautiful spring afternoon.

"Shall I begin with an anecdote?" she questioned, as she reached the selected tree where the children had already arranged a seat for her, while they ranged themselves on the grass around her.

"By all means," said Howard, "for an anecdote is really a little story."

"And we dote on stories," said Madge.

"Some German gentlemen who were unknown to each other were once riding in a coach. One of them proposed to tell the vocation of the rest if they would write, without hesitation, an answer to the question: 'What destroys its own offspring?' One wrote, Vital force. 'You,' said the questioner, 'are a biologist.' Another wrote, War. 'You are a soldier.' The publicist revealed himself by writing Revolution, and the farmer, Bees."

"Do bees really kill each other?" queried Madge. "Why, I thought they had no bad traits except stinging."

"Although the character of the bee is so nearly above reproach, the farmer's answer was a true one. And notwithstanding the high repute of bees as examples of thrift, foresight, and economy, it must be confessed that they are also arrant little burglars. The knight of the gold and brown armor, going forth to gather with such laborious diligence his golden treasures, seems almost a miraculous creature engaged at a self-imposed, herculean task of turning twenty-five pounds of honey into one comb. He is crafty, systematic, and ambitious to be rich; so, with no thought but that of plunder, he rifles the buckwheat patches, levies on the blossoming trees, and seizes the coveted wealth of the clover fields. He has been seen to visit twenty flowers in a single moment. If he finds one nectary dry, he seeks another

without delay. Unconsciously, indeed, he is doing the flowers a great service, but little he knows or cares as he climbs from the lower blossoms which open first on a bunch, to those above, which have opened later, that he is leaving pollen on the female flowers and receiving pollen from the upper male flowers to carry off. This helpful act is no concern of the sweet-toothed robber, whose long, hairy tongue is busy filling the honey bag with richest nectar. Yet, curiously enough, upon each journey he is careful to visit only one kind of flower."

"If he should forget, what curious mixed up flowers we should have, to be sure," cried Howard. "My! but isn't Botany interesting!"

"Not half so much so as natural history," John responded. "It's the bee, not the flower, we are talking about."

"It's the relation of the two, the insect and the flower, I think, that is so curious," said Alice.

"No doubt," Aunt Jane continued, "the reputation of the bee stands high because his amber stores are so useful to man. Think of what honey must have been to the world before sugar was invented!"

"As bees were most useful to man the study of them began at an early day. It is interesting to contrast the knowledge of the wisest of bee-lovers of the olden time with the results of modern discoveries regarding bees."

"What did the ancients say about them, Auntie?" asked Edith.

"Aristotle, a wise philosopher, was much perplexed about their production. He concluded that one queen was the king and leader, yet he could not understand why the workers, who are women, should carry the sting as a weapon; it was unwomanly, very! Yet they *must* be the mothers, for who ever saw fathers labor so for their children? He says it is difficult to know how bees perceive, for it is obvious they have no noses, and

uncertain if they have ears! But, four hundred years later, Virgil wrote that bees, on account of the niceness of the nose, should be placed where there are no ill-smelling things, and that noises frighten them because of the delicacy of their ears."

"How do the naturalists classify honey bees?" Edith asked; "are they true insects?"

"They are classed as Articulates, which includes animals whose bodies are made up of rings, or segments, joined together in a linear series, and whose legs are jointed at the place of union with the body, so the bee is a true insect. Bees belong to the tribe *Hymenoptera*, having delicate membranous wings, together with a high degree of intelligence. The family of the honey bees is called *Apidae*, the insects of which have broad heads; elbowed antennæ, which are thirteen jointed in males and twelve jointed in females; jaws strong; tongue generally long; a tibial spur on the four anterior legs and the first joint of the posterior foot is flattened to form a pollen basket."

"Only think," cried Madge, "a bee carries a basket on its foot all the time!"

"Aunt Jane, can't you show it to us through the microscope?" said John.

"Yes, with pleasure, but to finish the description of the bee you must know that the larvæ are helpless worms. The bee's family, *Apidae*, is subdivided into genera; every genus reproduces itself. The name of the genus of bees is *Apis*. Genera are subdivided into species, and species into varieties. One of the species of honey bees is called *mellifica*."

"Then I suppose," interrupted Howard, "that when a modern naturalist introduces the bee he says, 'Mr. *Apis Mellifica*.'"

"Yes, though there are a number of the species which are well established, such as, *Apis mellifica*, *Apis indica*, *Apis zonata*, *Apis unicolor*, and *Apis florea*. Our two common varieties are called the German or black bee, and the Italian or Ligurian. The latter were first imported into this country about 1860."

"Were any of the bees natives of this country?" Alice inquired.

"No true honey-bee is native here. Just when bees were first introduced is

unknown. The Indians named them the 'white men's flies.'"

"Oh!" cried Edith, "don't you all remember what Longfellow makes his Indian warrior say on the advent of the European?"

"Wheresoe'er they move, before them
Swarms the stinging fly, the Ahmo,
Swarms the bee, the honey-maker."

"Yes, the true poet is fond of weaving the interesting facts of nature into his rhymes. Of course you all remember the pretty poem, 'Telling the Bees,' where Whittier utilizes an old superstition regarding the death of the mistress of the house."

"I know it; I recited it at school," cried Madge.

"Superstition invested the bee with a kind of awe, but science supercedes this with a more intelligent regard. The natural history of the bee reads like a fairy tale. You have all seen bees swarm. The great cluster of perhaps 20,000 bees is formed by the bees clinging to each other, each bee with its two fore legs hangs to the two hind legs of the one above it. Yet a bee can easily detach itself and pass from the center outward to the surface of the bunch."

"It is astonishing," Aunt Jane continued, "how rapidly the bees take possession of the hive, and how soon they will begin that ceaseless industry for which they are so famous. Care is taken to stop every crack with propolis to make the hive tight. The bee has eight little wax pockets which it empties by picking out the wax with the fore legs. It is moistened, and worked by the mouth, and then stuck to the top of the hive. A large number of bees soon make a ball of wax, and fly off for supplies. Then the nursing bees make holes in this wax by forcing their heads against it, and so the bases of the cells are formed in the same way on opposite sides, a series of hollows are made back to back all over the comb. The walls of the cells are made six-sided tubes which fill all the space, and with the use of the least possible quantity of wax. While the cells are being prepared, some bees are away gathering honey, and some are hanging in clusters in the hive digesting honey which forms wax and oozes out into the wax baskets. But as soon as a few inches of

cells are ready the bees begin to store this honey. It has been gathered from the flowers by the use of the proboscis, or long under lip, and stored in the honey bag, which is now emptied through the mouth into the cell. It requires a number of bags to fill one cell. The bee also gathers pollen, moistens it, and packs it in her pollen baskets, on the last pair of legs. This is the bee bread which the nursing bees mix with honey and feed to the young ones."

"Now here we have the relation of the bee and the flower," cried Alice. "Isn't it beautiful how all things serve each other?"

"But just think of the cunning little bee with pollen baskets, and wax pockets, and honey bag and all that," exclaimed Madge.

"How many bees usually comprise a colony?" Howard questioned.

"A good one has about 80,000 workers, several thousand drones, and a queen who is the mother of the colony. She lives from two to four or even more years, and can be easily distinguished by her brighter color, greater length, shorter wings, and majestic carriage,—'looking every inch the queen.' When about five days old she leaves the hive for a short time, accompanied by a guard of drones, whose sole use is the fecundation of the queen by one of them. She remains fertile through life, only leaving the hive again at swarming time. The queen deposits small, oval, bluish-white eggs in the cells, one in each, to the number, under favorable conditions, of two to three thousand a day. The eggs hatch in three and a half days, and remain in the form of a worm three and a half days, when, having been fed, they are sealed over in the cells by the bees, where they remain fourteen days. When first covered up the larvæ spins a cocoon of silk around itself. In just twenty-one days it becomes a perfect bee, and eats itself out of cocoon and cell. In twenty-four hours, having been fed and well groomed by the nurses, it is ready for service inside the hive. The drones occupy larger cells and are longer in becoming mature. But the most wonderful thing in bee-dom is that the workers make some thimble-shaped cells much larger than the common ones. In these, the queen deposits

eggs which develop into queens solely, it seems, as if because of the larger size of the cells, and the peculiar kind of food given the larva. It is not desirable for several queens to hatch at once, hence the provision of depositing the eggs three days apart. The old queen destroys without mercy every young queen within her reach, but the workers guard the cells to prevent this, and usually the mother queen assembles a swarm and departs just as the young princess is ready to appear. This princess, in turn, if things favor, goes out with an 'after swarm,' and when the next princess appears the bees allow her to kill, by stinging, every remaining occupant of the royal cells. She then rules without a rival. When the drones are no longer of use, the workers sting them to death and they can not defend themselves, as they have no stings."

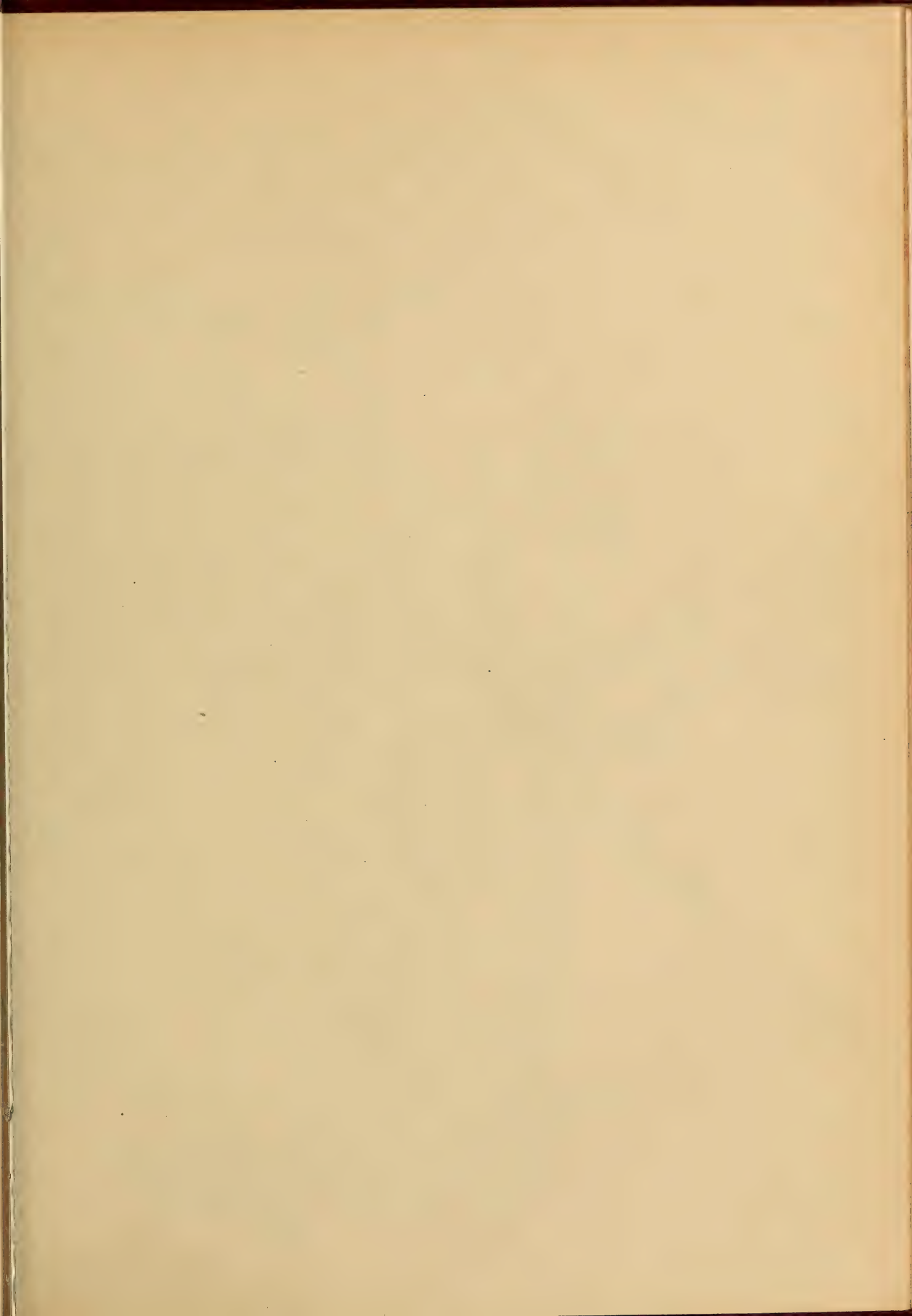
"And to think we have seen bees all our lives without knowing anything about them," cried Madge. "Do go on, Aunt Jane. What else do they do?"

"Division of labor is practiced by the bees, as several kinds of work are carried on, such as building, harvesting, storing, nursing, cleaning and ventilating. The latter is effected by the wings, and causes the humming noise heard within the hive. Bees near the opening face it and fan; other bees, with their backs to the entrance, carry the current on into all the passages until the air is cooled and purified in the most perfect manner. A veteran aparian says he learns something new, or, better appreciates some marvelous fact about his little charges, every year.

"I do wonder if a woman could manage an apiary? I'd like to have one, some time," said Edith.

"It is a business so well adapted to women," was the reply, "that it is surprising more are not engaged in it. Bees are social little creatures, who learn very soon to know the wishes of the aparian, and only in rare cases use the sting. Should this happen, however, almost immediate relief is effected by the application of onion juice. The improved hive, the separator, the artificial wax foundation, have made bee keeping almost a pastime."

BELLE PAXSON DRURY.





CARDINAL.
(*Cardinalis cardinalis*).
 $\frac{2}{3}$ Life-size.

COPYRIGHT 1900, BY A. W. MUMFORD, CHICAGO

THE CARDINAL BIRD.

(*Cardinalis cardinalis.*)

Upon the gray old forest's rim
I snuffed the crab-tree's sweet perfume;
And farther, where the light was dim,
I saw a bloom
Of May-apples, beneath the tent
Of umbrel leaves above them bent;
Where oft was shifting light and shade
The blue-eyed ivy wildly strayed;
And Solomon's-seal, in graceful play,
Swung where the straggling sunlight lay:
The same as when I earliest heard
The Cardinal Bird.

—William Davis Gallagher, "The Cardinal Bird."

Fortunate are they who live in the realm of the Cardinal. Who, indeed, is not entranced by the beautiful life of this bird? Not only the poets, but also all lovers of bird-life have been inspired by its beautiful garment of cardinal feathers and the exemplary habits of both the male and his mate. They love each other in their bird-like way and their lives are full of devotion to each other and to their offspring. The more somber and dove-colored female, with the dull red plumage of her crest, wings and tail, is hardly less attractive than her mate, and she reciprocates his loving attentions. These habits and their willingness to frequent the vicinity of man's abode when encouraged make the Cardinals beloved of all who make their acquaintance.

The poet Naylor has written:

Along the dust-white river road
The saucy Red-bird chirps and trills;
His liquid notes resound and rise
Until they meet the cloudless skies
And echo o'er the distant hills.

And Maurice Thompson says of its summer song, a greeting uttered in ringing syllables:

What cheer!

What cheer!

That is the Cardinal Grosbeak's way,
With his sooty face and his coat so red.

The Cardinals are noted singers. Both sexes sing, but the song of the male is more frequent and a louder and clearer whistle. His mate, however, is a charm-

ing songstress, her soft clear tones being exceedingly pleasing. Though her music differs somewhat from his, their call-note is the same and consists of a quickly uttered *tsip*. Though the Cardinal's song is the happiest during the nesting season, it does not hesitate to utter its merry whistle on the warmer days of winter. Its bright coat and song form one of the pleasant features of the somber winter months, for it is a resident nearly throughout its range. Its range covers the eastern United States, and it nests from the Gulf of Mexico northward to Iowa and New York.

The song of the Cardinal must be heard to be fully appreciated. It is a home bird and, unlike many other birds, frequently utters its sweetest notes near its nest. Its song is variable and has often been described on printed pages. In his "Birds of Ohio" Dr. Dawson has given the following interesting syllabic rendering of some of the leading forms:

1. *Ché-pêw, Ché-pêw, Wé-oo, Wé-oo, Wé-oo.*
2. *Whé-tew, Whé-tew, Whe-oo, Whe-oo.*
3. *We-oo, We-oo, We-oo, We-oo, We-oo.*
4. *Chitikew, Chitikew, he-wêêt—he-wêêt.*
5. *Tshew, tshew, tshew, tshew, tshew.*
6. *Who-y? Who-y? Who-y? Who-y?*
7. *Bird-ie, Bird-ie, Bird-ie, tshew, tshew, tshew.*
8. *Bird-ie, Bird-ie, Bird-ie, Bird-ie.*

Though the Cardinals may visit open shrubby fields and the vicinity of dwellings during the greater portion of the

year, in the breeding season they usually remain near their nesting sites. The nests are generally placed in bushes or in the low trees of a thicket. The thickets of river bottoms are favorite nesting sites. There they frequently build in the climbing vines. The nest is seldom built at a greater elevation than six or eight feet above the ground. The Cardinal is a shy bird during the breeding season and instances of its building a nest near public places are not frequent. During the mating season there seems to be only a friendly rivalry for the attention of some female. Frequently two males will be seeking her favor at the same time, both singing until the woods seem filled with their music. They never seem to become jealous in their rivalry and never resort to encounters for supremacy, as do many other birds. "Like typical nobles of olden times, never forgetting their high position and ever respecting the least of the proprieties, the Cardinals move and live truly kings among their baser fellows."

Mrs. Olive Thorne Miller has so well portrayed the domestic habits of these pretty birds that we repeat her words. She says: "As the head of a family the Cardinal is admirable not only in his attentions to his lovely dove-colored mate, but in singing to her by the hour, and in protecting her from intrusion or danger. To the young in the nest he is an untiring provider of worms and grubs, and thus most useful in the garden. Nothing can be more comical than his behavior when he first conducts his young family out into the world while his mate is engaged with her second sitting. He is as fussy as any young mother, hopping about in great excitement, and appearing to think the whole world thirsting for the life of his pretty little ones. The Cardinal mother shows the restless manners and anxious spirit of her mate, taking one's intrusion upon her domestic affairs greatly to heart, and being so much disturbed that there is more pain than pleasure in making acquaintance with her nestlings."

A FLYING LESSON.

Cock Robin sat on one of the middle branches of a tall old thorn tree which stands in the center of a bright green meadow.

The meadow is an ideal meadow, with its singing brook cooing a drowsy lullaby and with its carpet of meshy clover, dotted with pink and white bloom sending forth a most enticing odor, fresh and invigorating.

The old thorn tree is an ideal tree for a bird-house; great spreading branches, interlaced and overlapping form a safe hiding place from prying eyes, while

threatening clusters of long, forked thorns defy the would be desecration of happy birddom.

To the right and slightly below Cock Robin was a nest, carefully woven of fine rootlets and grapevine bark on the outside, plastered smoothly inside with clay brought from the near-by brook, and lastly an interlining of fine soft grass.

In the nest were three baby Robins, well covered with feathers.

Mother Robin was fluttering about hither and yon, now hovering near the nest, now rising above it, now dropping

below it and all the time chirruping, coaxing, scolding, and this is what she seemed to say: "Come now, my birdlings, you must be up and doing. You are quite old enough and strong enough, too, to use your wings. Up, up! Just so! O, dear, surely you are not all cowards. Will you not try, just once, for mother?"

But the three youngsters got no farther than poking their heads above the edge of the nest. Mother Robin tried again and again, for she was indeed a patient mother, but without success. Cock Robin was amused and seemed to be laughing under his wing or as one would say "in his sleeve."

He was a lazy fellow and did not try to help the dear patient weary mother to teach their offspring to fly. He only rose and perched himself on the topmost bough and seemed to say: "Their mother can manage them. Mothers are the ones to teach and discipline the young. I have perfect confidence in my mate's ability to do so." And on the topmost bough with a twinkle in his eye and a free-and-easy air he sat swaying to and fro.

But all of a sudden the twinkle left his eye, he straightened himself and looked and listened. Yes, here they come, the boy and girl; he knows them well; he has seen them often enough open the big gate by the barn and come tripping so lightly along, chattering like two magpies.

Sometimes they carried a basket and went on to the wood beyond the brook and just over the hill and returned with the basket laden with wild flowers. Sometimes they had rods and lines and stopped at the brook to fish. But this day they had neither basket nor rods, and they were coming straight toward the old thorn tree.

When they were only a few feet away Mother Robin spied them and like the sensible little bird-lady she was hovered close to her birdies and was as quiet as a mouse.

Cock Robin's heart beat so fast and hard that the little red vest could scarcely hold it, and he was so frightened he did not hear the boy say: "Yes, I am sure this strange bird has a nest in the mud

somewhere along the bank of this brook, for I saw him wandering up and down here yesterday at dusk and I am anxious to find his nest."

If Cock Robin had heard this he would have held his tongue. But he was sure they were coming straight to that tree and that they knew where that nest was with those three junior robins in it.

So, as the father of a family, he must be brave and defend his wife and children. With this determination he began to flutter and to call; to utter piercing cries; to drop down toward the nest; then to rise again swiftly to the top of the tree, and to act as though crazy from fright, in which condition he really was.

The boy, attracted by Cock Robin's behavior, quickened his pace toward the tree. He was just beneath the nest. "Come," said he to the girl, "there is surely a nest here. There must be from the way that old fellow takes on."

"Be careful," said the girl, "do not frighten the poor things."

But the boy defied even the threatening thorns and after cutting away the most formidable looking ones, drew himself up onto the limb nearest the ground, and just above his head in the fork of two branches was the object of his search. He carefully raised himself so that his eyes were just level with the edge of the nest when Whew! Whirr! into his face flew the three juniors, while about his head in direst distress darted the parent birds.

Such a surprise took the boy off his feet, and he tumbled to the ground, but rising quickly went after the nearest birdie, caught him and climbing up again gently placed him in the nest. But the boy did not reach the ground before the bird was out again, fluttering and flying swiftly for so young a chap.

The boy and girl tried to catch the three juniors to return them to the nest, but Cock Robin and his mate seemed to know best what was to be done.

They fluttered and flitted along the ground near their young, gently chirping and calling to them in encouraging tones, and the juniors flitted toward their wise little parents, who kept just a short distance ahead and thus coaxed and compelled them to fly.

MYRA ORMIN.

THE AMERICAN RED FOX.

(*Vulpes fulvus.*)

Probably more has been written regarding the Red Fox of both Europe and America than about any other mammalian animal. Its habits, its intelligence, its beauty and its graceful motions, all have appealed to the poet and the writer of prose. It is the hero of many stories and myths, and it is the symbol of slyness, cunning, mischief and deceit. It is the Reynard of the writer and sportsman. In proverbs and in traditions its attributes are praised and exalted. Pliny says: "In Thrace, when all parts are covered with ice, the Foxes are consulted, an animal which, in other respects, is baneful from its craftiness. It has been observed that this animal applies its ear to the ice for the purpose of testing its thickness; hence it is that the inhabitants will never cross frozen rivers and lakes until Foxes have passed over them and returned." Probably the greatest of the poems in which the Fox is the hero was written by Goethe, who considered this crafty animal an appropriate subject for an epic. Not all writers, however, give the Fox such an exalted position. Pechuel-Loesche writes: "Master Reynard of tradition and the Common Fox of the forest may not very well be regarded as the same animal, for the latter is by no means remarkably clever."

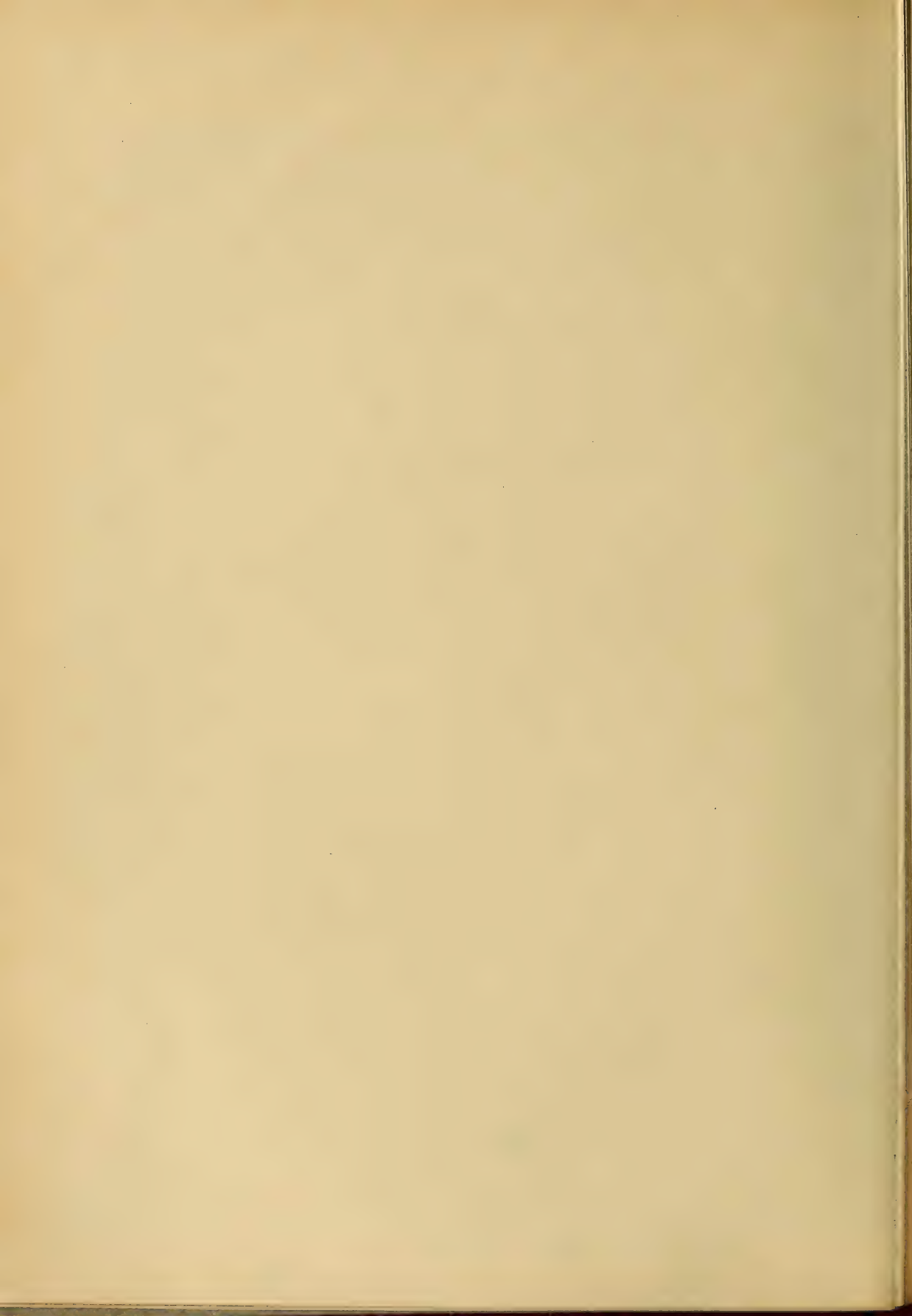
The Red Foxes of both America and Europe are very closely related, and by many naturalists they are looked upon as belonging to the same species, *Vulpes vulgaris*. Their habits are similar and the American form is fully as daring and crafty as its relative in Europe. The slight differences between the two forms are quite possibly due to the character of their environments. The American form is said not to possess the wind of the European and becomes exhausted much earlier in the chase. If this is true, however, the American Red Fox is cunning enough to find plenty of time to rest and thus prolong the chase indefinitely. While the American form is usually classified as a distinct species, *Vulpes fulvus*,

there is strong evidence which would indicate that the American Red Fox of today may have descended from individuals of the European form which were introduced, in some manner, into America long ago. "No remains of the Red Fox have been found in the cave deposits of America, while those of the gray fox are abundant." The European species was evidently an ancient inhabitant, for fossilized remains are quite frequently found in caverns, associated with those of other animals.

The habits of the American Red Fox are so well known both by observation and by numerous magazine articles, as well as by the descriptive texts of books on nature subjects, it seems unnecessary to enlarge upon them. Yet the words of Witmer Stone will not seem superfluous: "The reputation for shrewdness and cunning which the Fox has always borne is well earned and indisputable. One of the most characteristic traits of the whole Fox tribe is the quickness with which they gather experience and learn to avoid new dangers. The early settlers found little difficulty in trapping and shooting the Foxes which skulked about their clearings, and even now those found in wild, unsettled country are comparatively easy to outwit. But the Red Fox of cultivated districts has learned a great deal from watching the ways of men, and has already very nearly caught up with Reynard of the Old World in the matter of highly developed intellect."

The Fox is disliked by the sportsman because it destroys the partridges and other game of his hunting range, and by the farmer because it preys upon his poultry yard and his lambs. Yet the Fox is of considerable service to mankind, for it destroys many woodchucks and innumerable field mice and other noxious rodents. As the Fox is a burrowing animal, it will "dig out" a woodchuck if the opening to its burrow is not among roots. When other food is scarce, the Fox will eat frogs, worms, various insects, fish, crustaceans, mollusks and fruits.





TREES AND THEIR LIFE PROBLEMS.

As we walk along the streets or wander in the woods, admiring the dignity and gracefulness of the trees, few of us stop to realize the cost. We appreciate, in a measure, the cost of a cathedral, for who has not watched a building grow, stone by stone or brick by brick, until the last portion is in place? We appreciate fairly the cost of a human life, since we have so often seen the long and tedious struggle of the child, journeying toward maturity; we know of a surety that not only the child himself, but also his kinsfolk and friends have a weighty place in the struggle for manhood. We realize to some extent that animals attain maturity only through many severe struggles. Yet how few among the many have any conception of the fierceness of the conflicts which trees are obliged to meet on every hand. Nor is the market value of the tree any index of the cost, as would be true of an artificial structure. It will be the mission of the following paragraphs to unfold some of the problems which trees are obliged to face in their long and strenuous battle of life. In considering this topic, trees will first be regarded as individuals, while in the later paragraphs, the social life of trees will be considered.

One of the most obvious and important factors in the life of trees is their relation to light. Those who are at all familiar with plants are well aware that the production of the green coloring matter, which characterizes far the larger part of the plant world, is quite dependent upon light. Where growth takes place in the dark, as in the case of potatoes sprouting in a dark cellar, or inside of a head of cabbage, the green color fails to appear; the blanching of celery, when the stalks are buried, illustrates the same phenomenon. Similarly, if a tree branch be covered by soil, or enclosed in a dark chamber of any kind, the green color fails to appear, exactly as in the more familiar instances just enumerated. If light should be excluded from all of the branches, the entire tree would be lacking in the green coloring matter, and after a time the tree would die. A care-

ful study of such phenomena as these would show that the tree had starved to death. Thus we arrive at the important conclusion that for a tree to secure its food supply, it must be exposed to a certain degree of light, and must possess green coloring matter, the so-called chlorophyll, which is also dependent upon light for its existence. If we accept these statements as proven, and they have been demonstrated over and over again, it becomes easy to realize the great advantages which trees possess as compared with other plants. If light is necessary in the life of plants, those plants which are tallest and branch the most may be regarded as best fitted, so far as this factor is concerned. One has but to make a careful study on a bright, sunny day to assure himself of the wonderful perfection of the tree, as a light-receiving mechanism. In all of the vast mass of foliage, there is scarcely a leaf that fails to receive the direct rays of the sun during some period of the day. In trees which have small leaves like the pine, or finely divided leaves like the honey-locust, the rays of light are sifted down through the branches for a considerable distance, upon the leaves beneath. In trees with relatively large leaves, like the linden or catalpa, the leaves are placed far enough apart, so that some direct rays are reasonably sure of striking them. One standing at the base of one of these latter trees, and looking up toward the sky, will see a most marvelous adjustment of the leaves to one another, a utilization of all of the available space, and the formation of what has been termed a leaf mosaic. Green plants that are not trees may be divided into two classes, those which endure shade, and those which require sunlight. This latter class may be regarded as in a state of constant but hopeless conflict with the trees; that is, this conflict may be regarded as hopeless so long as the light relation is the decisive factor, since trees are better able to secure light than are the plants which grow beneath them. With shade plants, of course, the tale is very different, since they can secure an

amount of light that is quite sufficient for their full development, even in deep, dark woods.

It must not be supposed from the preceding considerations that trees are to be regarded as the most successful of all plant types, since many factors other than light enter into the problem. The law of compensation, which one encounters in so many fields, plays an important part here. We have seen that the tallest and most branched trees are the best fitted of all plants to secure a maximum amount of light, but these very features that are so advantageous here are the worst possible from the standpoint of protection. Among the dangers which are constantly besetting most plants and particularly trees, are the following: exposure to undue amounts of light, heat, cold, or wind, or the danger of an excessive loss of water. It is perhaps, an open question whether excessive light is often a real danger, except indirectly; an increase of light causes an increased loss of water, which is certainly detrimental. The greatest danger from excessive heat or wind is also due to the fact that these agents increase the evaporation of water from plant surfaces. The case of danger from cold needs more amplification, since we have here an important direct influence, as well as an indirect influence. The freezing of plants is a well-known phenomenon, and the damage that is caused by this agent is very great indeed. Apart from actual freezing it is well-known that certain plants, especially those native to warm climates, are often injured by temperatures above the actual freezing point. Much of the damage often attributed to cold directly is in reality due to an excessive loss of water. A familiar case of this is seen in the winter killing of wheat when not protected by snow, or of half-hardy shrubs that are not covered over for the winter with straw. While coverings of snow or straw may be supposed to keep plants a little warmer than would be the case if they were absent, their chief value in this respect is in delaying the access of cold or heat, and thus preventing some of the ill consequences which result from sudden temperature changes. Of course a deep layer of snow makes the plants beneath appreciably

warmer. But the greatest value of snow or straw in respect to winter-killing results from the fact that these agents greatly retard the loss of water by evaporation at a time when the frozen soil inhibits the absorption of water by the roots. Leaves that are exposed to the chilling blasts of winter lose their water, wither, turn brown and die, in a manner that is precisely similar to the desiccation of leaves in drought. From the preceding statements, as well as from many more that might be given, it may be concluded that the danger of an insufficient supply of water is the greatest danger that plants commonly have to face. Water is the most variable of the things that plants need, hence it is the factor of greatest consequence in the economy of plants. We cannot get along to the best advantage, if we are deprived of either air or money; we give more thought to the latter than to the former, because air is commonly present in sufficient quantities, whereas money is a highly variable thing. Similarly plants require, among other things, water, air, light, and heat, but in most conditions the latter three are abundant enough for all plant needs; water, on the other hand, is a will-of-the-wisp, whose distribution can scarce be predicted, even in a general way.

The dangers which have been considered in the preceding paragraph are dangers which come to all plants in a greater or less degree. We may now see how trees meet these problems, as compared with other plants. It is almost self-evident that trees are the most exposed to these dangers of all plant types, by reason of their great height and their manifold branching. An examination of trees shows us that they are most admirably protected from the bad effects of all or most of the above-mentioned factors. The severest period is doubtless that of winter, and at this time most of our northern trees are without leaves; the absence of leaves means a tremendously smaller surface for the evaporation of water. We have seen that the evaporation of water in winter is exceedingly detrimental to all plants, and particularly to trees by reason of their unusual exposure to wind and cold. Again leaves are very delicate organs as compared with the other organs of trees, and hence are

ill-adapted to withstand the vicissitudes of winter. During the cold period, about the only parts of a tree that are exposed are the buds and bark, organs which are readily seen to be well protected. A bud like that of the horse-chestnut is covered on the outside by thick bud scales, which are impervious to water, and hence well adapted to check evaporation; these scales also delay the ingress of heat or cold. The delicate buds within are still further protected from the elements by means of copious quantities of resin, and by a dense coat of hairs. While all winter buds are not so fully protected as are horse-chestnut buds, one or more of the things found there is commonly present. In small winter buds, which develop late, the devices for winter protection are less complete in most instances. An examination of bark discloses the fact that it has properties similar to those found in buds. In particular, one finds a strong development of cork or some other tissue which is relatively impervious to water, and hence adapted to reduce the winter transpiration. Cork is one of the most impermeable of known plant substances, which accounts for its common use as bottle-stoppers. Bark is doubtless of importance also in moderating the effect of temperature changes outside the tree. It is instructive to compare tropical trees with those of temperate regions. Within the rainy tropics, trees commonly have but little bark, and little or nothing comparable to winter buds, since bud scales are usually wanting. In tropical deserts, on the other hand, trees and shrubs possess a considerable amount of bark, and their buds have bud scales. In this latter case, it is obvious that the advantage of bark and bud scales is in checking the loss of an undue amount of water, since cold temperatures are unknown or at least uncommon. Not all trees, even in cold climates, shed their leaves in winter. All are familiar with pines, firs, and other cone-bearing trees, and it may be asked how such trees are protected in cold weather, since they are obviously alike at all seasons. To properly appreciate the situation here it is necessary to make a microscopic study of the leaf. A study such as this shows that the leaves of these evergreens are remarkably well protected

from outside dangers. In the first place the skin is unusually thick, as compared with other leaves. The outer part of this skin, the so-called cuticle, is relatively impermeable to water, and is otherwise protective against external dangers. Within there are other thick-walled elements, also protective. These characters are somewhat evident without the microscope, since they cause the rigidity of the evergreen leaf. Evergreen leaves then, such as those of the pine, are adequately adapted to the severities of winter, as indeed is evident at the outset from the mere fact that they stand the severest winters without injury.

We are now prepared to consider the matter of compensation to which allusion has previously been made. While it is doubtless true that trees are as well protected as other plants, the cost, as measured in terms of energy expenditure, must be enormous. Plants with underground stems are well protected during winter both from cold and loss of water, by reason of the fact that all aerial and hence exposed parts have died down. Plants with the winter habits of the ordinary grasses are similarly though less protected, inasmuch as they remain close to the soil, partaking of its heat; they are usually more or less covered also by snow or dead leaves. Plants such as these are not obliged to expend extra energy in building up protective tissues, but can devote all their strength to the development of leaves, stems, flowers, and fruit. Trees, however, must expend a great amount of energy in the construction of bark layers over every limb, and protective structures over every bud. It is then generally true among plants that those which are best fitted to receive a maximum of light are also most exposed to climatic vicissitudes, and are obliged to be most prodigal in the development of protective tissues and organs. On the contrary, those plants which are most unsatisfactorily related to light are the very plants which are fully protected with the least expenditure of constructive energy.

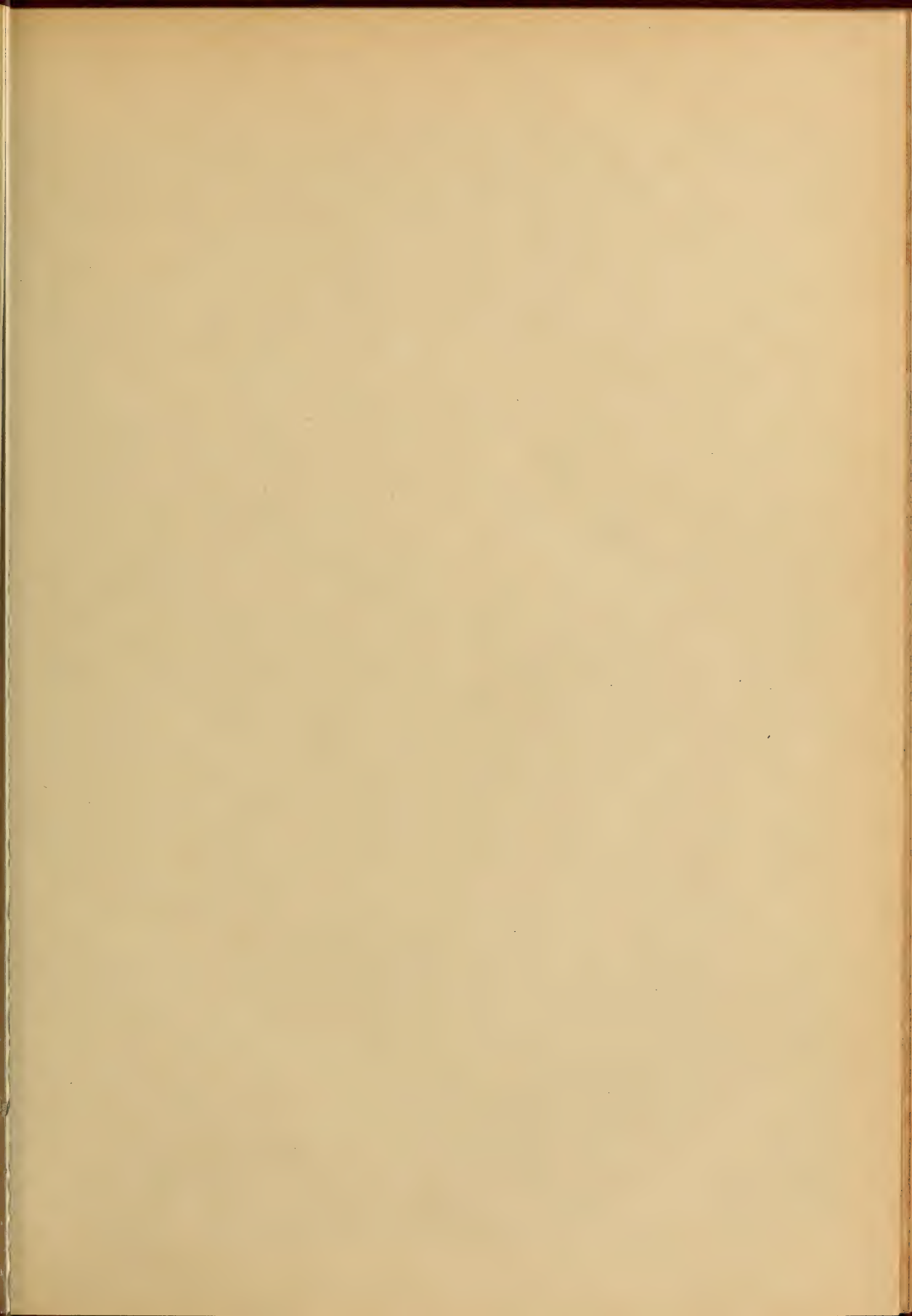
There are a great many more interesting relations between trees and the physical world, but it is perhaps wiser to devote attention now to the social relations of trees, that is the relations of trees

to each other. It is a matter of common observation that trees usually grow in communities or societies, rather than as solitary individuals. Sometimes there is an extensive pure growth of a single tree species, as in the case of some species of pines, or tamaracks. Much more commonly one encounters mixed forests, where two or more species are growing in the same society. This condition is admirably seen along river bottoms, where ten or more species of trees are commonly to be found together. It must not be supposed that the association of trees in a society necessarily implies any mutual relation between the various species. A red oak may grow with a white oak or a hickory, merely because each of these three species delights in the same kind of soil. It may be, and probably is, a matter of utter indifference to any one of these three kinds of trees whether the others are present or not. But this absence of a mutual relation is not found in all cases. It is a matter for wonder to many woodmen that when a forest of a certain kind is cut down, it is succeeded by a totally different type of forest. For example, it is a matter of frequent experience in our northern woods that where a forest of pines is cut away, a growth of birch and poplar springs up in its place. A hardwood forest is sometimes succeeded in a similar manner by pines. The explanation of these phenomena is not especially difficult. Birches and poplars, as a rule, require a great amount of light for their development; the removal of the pines gives such trees the very opportunity that they need, and they spring up in profusion. Pines, on the other hand, require, or at least can endure, a greater amount of shade than birches or poplars, but they do not thrive in dense shade as do such hardwood trees as the sugar maple and the beech. There would then be a succession of trees in natural forests about as follows: on a new area of land one would find those trees which require a maximum of light. These trees would not be followed by their own kind, since they cause a shade that is too great for seedlings of their own species, though well adapted for some other species that requires a smaller degree of light. Again,

this second species might not be succeeded by its own kind, but by a third species which requires a still smaller degree of light. At the end of the natural series would be those trees, which can endure the greatest degree of shade. The tendency thus would be for forests to become less open and more shady from decade to decade, and from century to century. As forests become more shady, moisture and forest mold become more and more conserved, so that the forest soil becomes richer and richer. In summation we find that most forest trees bring about conditions that are unfavorable for their own kind and favorable for others, that the first forests of a region are composed of relatively light-loving trees, which do not require a soil that is especially rich. The later forests are composed of trees which can endure denser shade and which require a richer soil. When a forest is destroyed, the density of the shade is decreased, and the soil is exposed to sun and wind, and consequently becomes less rich. The result of course can be nothing else than a backward step. An excellent but saddening illustration of this principle is to be seen in northern Michigan, where the valuable pine forests, which the lumbermen have destroyed, have been succeeded by other trees of but little value.

In this contribution, only two or three of the many tree problems have been dwelt upon, but perhaps enough has been said to illustrate the chief contention that has been made, viz.: that the life problems of trees are as complex and manifold and as real as the problems which confront the lower animals and even man himself. There is no field of study that is more enticing, or more certain to yield valuable results than the study of tree problems. Nor is there any field where there is more that is unknown, but yet knowable, than here. The science of forestry, which is just now assuming a place of great importance in this country, depends for its ultimate success upon the understanding of the tree, and apart from any economic consideration, the study of trees and their problems is one that is certain to bring to its devotees culture, health, and happiness.

HENRY CHANDLER COWLES.





THE MOUNTAIN SHEEP OR BIGHORN.

(*Ovis montanus*.)

Few wild animals are less well known to the people at large than is the Mountain Sheep or Bighorn of the higher altitudes of western North America. It is a native only of the wildest, the most inaccessible, the most wonderful areas of that wonderful mountainous backbone of our continent. It seemingly can only thrive and attain its highest development, both mentally and physically, in these regions of the purest air and of the grandest scenery. It would almost seem that this graceful and keen-sighted animal ascends the dizzy heights of precipitous crags not alone as a means of protection from its natural enemies, but also because of an instinctive satisfaction in viewing the stupendous works of Nature. The fortunate few who have seen the Mountain Sheep in its element say that there is nothing more awe-inspiring than the view of one of these creatures as it stands erect upon a rocky ledge, very high up on the mountain side, critically viewing its domain.

There are several species of Mountain Sheep, all inhabiting the Northern Hemisphere. Asia, Europe, Africa, as well as North America, have their representatives. All the species frequent only mountainous regions and all thrive only at high altitudes. It is said that some of them will ascend to a height of over twenty thousand feet above the sea level, an altitude reached by no other animals excepting the musk ox, the mountain goats and a very few species of birds. It is only in the winter time that Mountain Sheep are wont to seek the lower levels of their range. This is not due to the cold but rather to the fact that their pastures of the higher altitudes are deeply covered with snow. In the summer their food consists of the fresh and juicy vegetation of the mountain sides, while in the winter they feed upon the dry grass, mosses and lichens which in many instances are obtained only by

pawing away the snow. The bark of trees and the young shoots of woody plants are also eaten. These animals, however, never seem to be in a poor condition because of a lack of nourishment.

The Mountain Sheep of our illustration inhabits the higher mountains from British Columbia southward to Arizona, and related varieties are found on the mountains to the north, south, and west of this range. Their agility and the ease with which they climb the most inaccessible spots, where man can follow only with great difficulty, affords them their most potent protection. Even the young are as difficult to capture, for they can easily follow wherever their mothers may lead. Proud, indeed, may that hunter well be whose quarry is one of these noble animals. Hunting them has been made much more difficult, for in regions where Mountain Sheep have learned the ways of man they fear him fully as much as they do the wolf. Hunting this Sheep is the finest of sport for the seasoned hunter. While their flesh furnishes excellent meat, the possession of their horned heads is most highly prized by the sportsman. Mr. Hornaday has said, "The head of the male Bighorn is a trophy which appeals to all sorts and conditions of hunters except Indians." Many hundreds have been slain merely for their heads.

Mr. Hornaday says that the ideal haunts of the Mountain Sheep "are the slopes of high mountains, above timber line, near the edge of the snow fields that are perpetual." Here, in the summer time, they find plenty of food "It is essential, however, that one side of the Mountain Sheep's home ranch should fall away abruptly in ragged lines of rim-rock, with acres of slide-rock below, in order that the Sheep may have the means to escape from their numerous enemies, particularly hunters."

Audubon, who first saw these Sheep in the "Bad Lands" which form the most eastern portion of their range, says of this habitat: "Perhaps some idea of the country they inhabit—which is called by the French-Canadians and hunters '*mauvaise terres*'—may be formed by imagining some hundreds of loaves of sugar of different sizes, irregularly broken and truncated at top, placed somewhat apart and magnifying them into hills of considerable size. Over these hills and ravines the Rocky Mountain Sheep bound up and down, and you may estimate the difficulty of approaching them and conceive the great activity and sure-footedness of this species."

Mr. Witmer Stone has said, "The Bighorn might be called the chamois of our Western mountains, scaling the rugged cliffs and plunging over precipices with the same agility and confidence that mark the famous inhabitant of the Alps."

Male Mountain Sheep have been known to attain a weight of over three hundred and fifty pounds. Their massive horns, measured along the curvature, may have a length of nearly thirty inches and may have a weight of fifty pounds. While, indeed, the horns are a trophy worthy the efforts of the hunter, these harmless creatures should be spared from wanton slaughter. In many localities where they were once common they are now rare or entirely exterminated. Hundreds have been killed merely for the sport that will satisfy the uncontrolled spirit of the hunter who does not value animal life. Well may the true lover of Nature be satisfied if he is permitted to watch the movements of this wary Sheep. "The elastic spring of the animal when started, and the easy poise of the splendid head as it settles back on the shoulders, are exceedingly graceful, and the animal seems built and proportioned to the finest detail for the life that it leads."

SETH MINDWELL.

ROSE-TIME.

June's in the world, and now 'tis time
The rose-trees through the porches climb,—
The rose-trees, that are near as old,
With memories as manifold
As ancient porch and roof-tree, where
They breathe again the June-time air.
White roses and red roses, they
Are comrades gossiping today
Near to the eaves they love and woo,
Ah nearer than their forbears grew.
All through the year, in sun and rain,
Old thresholds never yet in vain
Await the rose-time, and the rose
The advent of the June-time knows.

—FRANK WALCOTT HUTT.

BIRDS AND NATURE

CONTENTS

	Page
THE SCARLET TANAGER (Nelly Hart Woodworth) [Poem]	40
THE SUMMER TANAGER [Illustration]	50
SOME OF THE WOODS OF THE SOUTHLAND (Mary M. Stratner)	53
IN AUGUST (Frank Wolcott Hutt) [Poem]	56
THE PRAIRIE HEN [Illustration]	59
SUMMER (Eliza Woodworth) [Poem]	61
THE WILSON'S SNIPER (Gerard Alan Abbott) [Illustration]	62
A FEW BIRD HOMES (Rest H. Metcalf)	65
THE NESTING OF A LEAF-CUTTING BEE (Wilmatte Cockerell)	68
THE KENTUCKY WARBLER [Illustration]	71
SEPTEMBER AND OCTOBER WITH THE CALIFORNIA WOODPECKER [Elnora Moody]	72
A WEED (Louise Driscoll) [Poem]	73
THE YELLOW-BREASTED CHAT [Illustration]	74
THE GOOD OLD EARTH (Mrs. M. A. Maitland) [Poem]	77
CURIOUS FRUITS (Belle Paxson Drury)	78
THE SNOWY HERON (H. Walton Clark) [Illustration]	83
BIRDS AND BOYS IN NORWAY (Mary Grant O'Sheridan)	84
THE WESTERN FOX SQUIRREL AND ITS RELATIVES (Seth Mindwell) [Illustration]	86
THE MOTHER PRAIRIE CHICKEN (J. Mayne Baltimore)	90
SOMETHING ABOUT BUTTERFLIES (Isabel M. Johnston) [Illustration]	92
THE CHILD AND THE BUTTERFLY (Nixon Waterman) [Poem]	96

EDITED BY WILLIAM KERR HIGLEY

ILLUSTRATED BY COLOR PHOTOGRAPHY

\$1.50 a Year. 15 Cts. a Copy.

A. W. MUMFORD, Publisher

378 Wabash Ave., Chicago, Ill.

BIRDS AND NATURE

Monthly, except July and August

TERMS AND CONDITIONS OF PUBLICATION

PRICE. Subscription price is one dollar and fifty cents a year, payable in advance; with 50 assorted pictures, \$2.00; single copy, 15 cents.

POSTAGE IS PREPAID by the publisher for all subscriptions in the United States, Guam, Porto Rico, Tutuila (Samoa), Canada and Mexico. For all other countries in the Postal Union add 30 cents postage.

CHANGE OF ADDRESS. When a change of address is ordered, both the new and the old address must be given. Postmasters are not allowed to forward second-class matter until postage is sent to prepay charges. It costs two cents per copy to forward this magazine. Subscribers who do not observe this rule should not ask us to send duplicate copies.

DISCONTINUANCES. If a subscriber wishes his magazine discontinued at the expiration of his subscription, notice to that effect should be sent, otherwise it is assumed that a continuance of the subscription is desired.

HOW TO REMIT. Remittances should be sent by check, draft, express order, or money order, payable to order of A. W. Mumford. Cash should be sent in registered letter.

AGENTS. We want an energetic, courteous agent in every town and county. Write for terms and territory.

RECEIPTS. Remittances are acknowledged by change of label on wrapper, indicating date to which subscription is paid.

MAGAZINES, back numbers, from 1897, 25 cents a copy, \$2.00 a year; the 84 back numbers for \$12.60.

BOUND VOLUMES, I to XVI, each 8vo, 244 pages, from 40 to 60 colored pictures, 8x10 in., cloth, \$1.50. Double volumes, half morocco, \$3.00. Sixteen single volumes, cloth, \$18.00. Eight double volumes, half morocco, \$18.00.

Exchange price for bound volumes when magazines are returned: Single volumes, cloth, \$1.00. Combined volumes, half morocco, \$1.50.

COLORED PICTURES, assorted as desired, 2 cents each; \$1.80 per 100; \$15.00 per 1,000. The 648 pictures for \$6.48.

PREMIUMS. Either of the following colored pictures sent free with subscriptions: (1) *Song of the Lark*, 18x21, or (2) *Gladstone*, 18x24, or (3) *The Golden Pheasant*, 18x24, or (4) *ten colored pictures from Birds and Nature*, (5) *Three Forest Tree Pictures*, 9x12, or (6) *Set of 12 Industrial Pictures*.

OTHER PUBLICATIONS.

Little Folks.....\$1.00
School Bulletin (Monthly).....1.00
American Primary Teacher (Monthly).....1.00
N. E. Journal of Education (Weekly).....2.50
Educational Review (Monthly).....3.00

Ten per cent discount on any or all of these when ordered in combination with *Birds and Nature*. Sent to one or several addresses.

All letters should be addressed to **A. W. MUMFORD, Publisher, 378 Wabash Avenue, Chicago**

\$4.10 for \$2.00 A COMBINATION
OFFER THAT
MEANS SOMETHING

BIRDS AND NATURE (one year).....\$1.50
BIRDS OF SONG AND STORY (Grinnell).....1.00
GAME OF BIRDS......35
GOLDEN PHEASANT (Colored Picture)......25
LITERATURE GAME......25
GAME OF INDUSTRIES......25
TWENTY-FIVE PICTURES (From Birds and Nature)......50

ALL FOR ONLY
\$2.00

Postage or express 25 cents

The total amount of value.....\$4.10

BIRDS AND NATURE——Monthly; 48 pages, 8x10 inches; per year, \$1.50. A magazine devoted to nature, and illustrated by color photography. It is the only periodical in the world which publishes pictures of birds, animals, insects, flowers, plants, etc., in natural colors. Eight full-page plates each month.

"Certainly no periodical, and probably no book, on birds ever found anything like such favor with the public as *BIRDS AND NATURE*."—*Evening Post, New York*

BIRDS OF SONG AND STORY——A bird book for Audubon societies, 16 color plates.

GAME OF BIRDS——Illustrations of popular birds, in colors true to nature, on 52 finely enameled cards 2½x3¼ inches. Enclosed in case with full directions for playing. A beautiful and fascinating game.

GOLDEN PHEASANT——A beautiful Picture for framing. Printed in natural colors on fine paper 18x24 inches.

LITERATURE GAME——500 Questions and Answers in English Literature. 100 cards, 2½x3 inches. Interesting and instructive.

GAME OF INDUSTRIES——Educational—400 Questions and Answers on the great industries of our country. 100 cards, 2½x3 inches.

REMEMBER——A year's subscription to *BIRDS AND NATURE* and "Birds of Song and Story" alone amount to \$2.50. If you now take *BIRDS AND NATURE* your subscription will be advanced one year.

A sample of *Birds and Nature* for a dime and two pennies—13 cents in stamps. Send for Catalogue.

A. W. MUMFORD, Publisher, 378 Wabash Avenue, Chicago.

BIRDS AND NATURE.

ILLUSTRATED BY COLOR PHOTOGRAPHY.

VOL XVI

SEPTEMBER, 1904

No. 2

THE SCARLET TANAGER.

Bird of Paradise gone astray
High in the trees he takes his way,
Dyed in a flame that no waters cool,
Though he dips himself in the forest pool
He goes the same as when he came;
No shadows startle him, unafraid,—
A rose on the breast of silence laid.

High in the tops of the cool, green trees
He fingers boldly the organ keys,
Hid in a network of green above
With a cheery carol he tells his love;
Or what is best, he seeks the nest
Where the little lady in robes of green
Holds open court like a forest queen.

Crossing the meadows in early June
In a path of flame, to a goodly tune,
He lights a star that will never set
Till summer is crowned with her coronet;
When rain and sun e'er the summer's done
Have ruined his wedding dress, he goes
Like other folk in his common clothes.

—NELLY HART WOODWORTH.

THE SUMMER TANAGER.

(*Piranga rubra*.)

Is there a more beautiful sight in all nature than a grove of orange trees laden with fruit, starred with their delicious blossoms, and with flocks of Redbirds disporting themselves among the dark glossy leaves?

—Neltje Blanchan, in "Bird Neighbors."

To those whose pleasure it is to live in the realm of the Summer Tanager, both he and his less brightly colored, though beautiful, mate form one of the most beautiful features of nature. He is "the redbird *par excellence*," and in the estimation of many, the sweetest singer of the tanager family. Frequenting open woods, groves and orchards, his brilliant colors flash in the sunlight as he flies through the tree tops and alighting, utters his cheerful musical call, *chicky-tucky-tuck*. He means much to the southern farmers who hear him say *wet, wet, wet*, and they consider him a sure prophet, whose voice is an indication of rain. Its song, while louder and more musical, very closely resembles that of the scarlet tanager. Mr. Ridgway thinks the song "equals in strength that of the robin, but is uttered more hurriedly, is more 'wiry,' and much more continued." Its song-notes are not as sharp and seemingly much less forced than those of the scarlet species. Some observers have noticed a resemblance in its song to that of the patient red-eyed vireo. It is not unlike the latter species, too, in its deliberate movements. Dr. Dawson has said the Summer Tanagers "give one the impression that they are taking a leisurely summer vacation and have plenty of time at their disposal." However, they are expert insect catchers while on the wing.

The Summer Tanager is a member of a family which includes about three hundred and fifty species. It is an American family and practically confined to the tropics, only five of the species reaching the United States. While nearly all the tanagers possess a brilliant plumage, only a few of the species are musical. Mr. Chapman says, "The tropical species are of a roving disposition and wander through the forests in search of certain trees bearing ripe fruit, near which they may always be found in numbers." Though the Summer Tanager spends its

winters in the tropical climate of Central and northern South America, its summer range extends through the United States, east of the Great Plains, though it is only common south of the fortieth degree of latitude. It breeds throughout its United States range.

This Tanager bears several common names, nearly all referring to its color. The more common of them are: Redbird, Vermilion Tanager, Red Tanager, Summer Redbird and Smooth-headed Redbird. While this species will feed upon wild fruits and insects in general, its food largely consists of hornets, wasps and bees. For this reason it is commonly called by farmers the Red Bee-bird.

The male varies in color, for it is several years before it attains the full adult plumage. Immature males will show a "mixture of red and yellow, in relative proportions according to the age." In fact, the young male resembles the female except that it is more brilliant in color. The female may also have more or less red in the color of its plumage. One shot at Wheatland, Indiana, in 1881, had the plumage "more than one-half red, the red color being of greater extent, in fact, than on the male, which was killed by the same shot! The tint of the red is very peculiar, however, being of dull Chinese orange, instead of pure rosy vermilion, as in the male."

The nest of the Summer Tanager is not a particularly artistic structure. It is usually shallow but quite firmly built. The walls are constructed with wiry stems of grasses and weeds and lined with finer stems and tendrils. Sometimes the walls are so thin that the eggs may be seen through them. The nest is usually placed near the extremity of a branch of a tree near the edge of the forest, and is generally from eight to twenty feet above the ground. So frail is the nest that it is usually destroyed by the early fall winds.



SUMMER TANAGER.
(*Piranga rubra*).
 $\frac{1}{2}$ Life-size.

COPYRIGHT 1900, BY A. W. MUMFORD, CHICAGO

SOME OF THE WOODS OF THE SOUTHLAND.

THE DATE-PALM.

The earliest fruit of which we read is the apple—the forbidden apple—and very old-time lore hints that it was not the apple of our modern times, but the *date*-apple with which the wily serpent tempted Mother Eve, who, in turn, tempted her too-willing spouse. However this may be, we know that the Date Apple—or Date-Palm, as we moderns call it—is one of the very earliest fruits cultivated, having been grown for over four thousand years along the Euphrates River.

The deserts and many regions in Arabia would not be habitable were it not for the Date-Palm. To say nothing of the fruit itself, it is there almost the only tree suitable for use in the construction of houses and other necessary objects. In some regions, it is only because of the partial shade of these palms, which protect from the burning sun and scorching winds, that other fruits can thrive.

Although it would seem that the Date required a very hot climate, it has been successfully cultivated in our own country. It was first introduced by the Mission Fathers in the latter part of the eighteenth century, by means of seeds. Unfortunately these trees raised from the seed produced but inferior fruit, and later off-shoots had to be imported from Sahara, but these first trees are now striking land-marks in Mexico and California and are proofs of the labors and far-sightedness of the frairs and padres.

The Date-tree has but a single trunk, but produces off-shoots at the base. These are transplanted and grow to trees in their turn. Where altogether unmolested, these off-shoots grow quickly and often attain to almost the height of the giant parent stem, while later they themselves produce off-shoots when the parent stem has passed the age of reproduction, thus producing a growth so dense that the natives are compelled to keep

them cut away in order to insure paths and roadways.

No matter how old or how tall the Date-Palm grows, the trunk remains the same in diameter. One may estimate its age by its height, but never by diameter. The leaves are feather-shaped, and are from twelve to fifteen feet in length, and from twelve to twenty leaves are grown in a year. The lower leaves droop downward and drop off in the course of time, leaving the palm crowned with the living green leaves.

The Date-Palm is very decided as to sex; and, excepting in the wild state where the males are as numerous as the females, must be pollinated by hand. In cultivated groves only one male is grown for from twenty-five to fifty females. The tree begins to bloom and bear fruit when six or eight years old. A good tree will bear one or two hundred pounds of fruit a year, but when on very rich soil and bountifully irrigated the yield is almost doubled.

The blooms come in early spring—the writer, who lives in middle Florida, has trees which bloom in early February. The male flower cluster consists of a stalk bearing a number of short twigs to which the flowers are attached, and is contained in a hard, brown sheath which opens as the bloom bursts forth. One of these twigs suffices to pollinate a whole female cluster. Several clusters grow on one tree.

The female flowers are also enclosed in a sheath; and when this sheath opens the time of pollination must begin. The tips of the sheath are pulled apart, the cluster of flowers is pulled out and a twig of male bloom is inserted and is tied into place with a string or fiber strong enough to hold it in place yet not so strong that it cannot be forced away by the future development of the fruit. The blooms of both sexes are white and wax-

like; but the sexes are easily distinguishable. The pollen of the male plant may be preserved for pollination an entire year as the females may bloom earlier or later.

The young fruit a few days after pollination is white; later it becomes green. About the end of June three fruits will have developed from each flower. If the flowers are properly pollinated two of the three fruits will fall, if not, all three will stay hanging and produce fruit entirely valueless. Towards the end of summer the dates become red or yellow. When a bright red or yellow they begin to slowly ripen.

Mexico, Arizona and California are admirably adapted to date culture. In Florida the test has not yet been thoroughly made, though South Florida seems as well adapted as any state in the Union. During the big freeze which destroyed so many orange groves in north and middle Florida the writer's trees were frozen to the ground, but they grew out again, and have been blooming for three years, though they, thus far, have borne no fruit.

There are many varieties of dates, and much is yet to be learned as to the peculiar varieties best suited to each section of a country.

THE PINE.

There are many varieties of Pine, but the hard, curly, evergreen, resinous Pine is a tree peculiar to the South, and it is the chief resource of its lumber commerce. It grows very tall, often with a circumference of six to ten feet, straight up, thirty or forty feet to its first limb. Its leaves, or "needles," are longer than those of other pines, and, when gathered green and cured in the shade, are much used for pillows, because their aromatic and resinous properties are conducive to healthful sleep. During the months of March and April, blooms form on the end of each limb and branch; and a Pine-tree thus in bloom looks like a Christmas tree with the candles ready for lighting, waiting but the hands of the decorators and of Santa Claus. Later, these blooms form a cone of hard, brown, resinous leaves. These are useful for kindling fires and for decorative purposes.

The tree is full of fat, resin and oil, making the lumber hard, heavy and durable, but needing good sharp tools to work it up. The grain is beautifully curly, and takes a very handsome polish.

One of the greatest industries of the South is the extracting of the oils and resin from the Pines. The trees are chipped, or "boxed," and the sap which collects in the wound is gathered and taken to the stills, where the turpentine is distilled from the resin and the other crude properties of this sap. The tree, then, above the cut becomes light and devoid of the heaviness and durability which it had previously possessed. Below the cut—which is generally about two feet from the ground—the stump is very rich in oils and resin; and many firms are engaged in having these split finely, packed into convenient bundles and shipped to distant cities where they are used as kindling wood. Many a boy and girl in pioneer times—and even yet, in the backwoods districts—studied the morrow's lesson by the light of "a fat-pine torch."

THE CEDAR.

The Cedar of the Southland is the Red Cedar, growing most extensively in Florida. Like all cedars it is an evergreen. In the lowlands along the coasts and hummocks it grows often six feet in circumference, and twenty feet up to the first limb. It branches heavily, and grows leaves densely. These latter are of a medium green color and are oily. Berries are produced from which the useful and fragrant cedar oil is pressed.

The wood is dark-red in color. Where quickly grown, in moist places, it is straight-grained—so much so that it is used almost exclusively in the making of lead pencils. There are large mills in Florida which do nothing but saw up great rafts, steamer and train-loads of red cedar into slats four or five inches wide and the length of a lead pencil.

Where the growth of the tree has been slower—generally on high, dry or shelly land—the grain is very curly, very dark-red and extremely beautiful. Often the large roots, too, are used, because these are almost black. No wood takes on a more beautiful polish than Red Cedar.

THE PALMETTO.

The Palmetto tree is unique, interesting and useful. It grows only in warm latitudes. When young it resembles the graceful potted palms of northern conservatories, but it grows on, taller and taller, shedding its old, lower leaves as it puts on the newer ones above, and stops not to send out branch or limb, but seems to have only the one aim of reaching the clouds. When, after a century or two it has reached its height, it presents to the eye a straight pole ninety or a hundred feet high, two feet in circumference all the way up, and topped with a waving green ball as large around as a cart-wheel. In that ball is a bud a foot or two long and as thick as a man's arm. It is encased in tough, fibrous layers of "boots." This bud, when cooked as only a native can cook it, is very delicious and forms the chief article of food for the poorer classes. Raw, it has somewhat the taste of chestnuts. The natives call it "cabbage." The "boots" and the large leaves are sold at the fiber-mills, where they are made into brushes or used as "packing" for mattresses.

The wood of the tree, at the heart, is pithy and very fibrous; this part, too, is made into brushes and scrubbers. Towards the bark, and as the tree ages and toughens, the wood is hard and springy, and is much liked for walking canes. Under water the logs of palmetto are almost everlasting; for this reason and because of the fact that the destructive teredo bug shuns it, this wood is much in demand for docks, where pilings must be under water. Above ground it is worth little, excepting where natives use it as logs for building purposes. The leaves, which are large and palm-shaped, with a stem perhaps ten feet long, are then used to cover the buildings.

In the month of May the Palmetto sends out the bud stems which are about three feet long. Each tree sends out from six to twelve of these stems. They are laden with tiny white, waxy blossoms, from which later are produced round, black berries. The bees feed on the blossoms, making a honey that is delicious with a flavor peculiarly its own. From the berries the famous "Palmetto wine," which is used so much as a medicine, is made.

There are other varieties of Palmettos; some growing scarcely more than four feet high. These are the Saw Palmetto and the Needle Palmetto. The latter grows more erect than the former and may attain a height of eight feet, but makes no "body," the stems of the leaves coming directly from the crown just above the ground, and growing straight and slender, up to, perhaps, six feet before the leaf proper begins. Thus far no commercial properties have been discovered in the Needle Palmetto, but it is very ornamental. The Saw Palmetto grows lower with shorter stems and produces an abundance of berries like those of the Cabbage Palmetto, though somewhat larger. It has also a commercial value, because of the fine tannin contained in its roots. These roots are from six to twelve inches in circumference. They run on top of the ground, often, a distance of twenty-five feet or more. On the underside of these roots are fine root-lets, which feed the parent plant. Then there is the Royal Palmetto, almost identical with the Cabbage Palmetto, but is more royally beautiful.

The spiral palm, the growth of which is indicated by its name; the umbrella palm, and the sable palm, being more on the ornamental than on the useful order, can hardly be classed as "woods;" but they all belong to the same family as do the Cabbage Palmetto.

CYPRESS.

Cypress is the *peculiar* wood of the South. It grows only in swamps subject to overflows. It grows very large in circumference at the base and tapers up to about ten feet. When it has reached this height it seems to have decided to stop its tapering habit and grows on in uniform girth, perhaps sixty feet to the first branch. The leaves of the Cypress tree are fine, and similar to those of the cedar.

When wanted for lumber the tree must be deadened at least a year before cutting, because it is so full of water that the logs would sink unless first given time to dry. Scaffolds are built, and on these the woodsmen stand and chop the tree high up where the tapering has ceased. The logs are then light and easily floated out of the swamps.

Cypress lumber is so valuable that

much of it is exported. Boards are often sixty feet or more in length, and thirty inches wide. The wood is light, soft, even and fine-grained, very durable and easy to work.

THE LIVE OAK.

The Live Oak is the hardest wood of the South. It is often called the Iron Tree, because of its hardness and durability. It is often used as a substitute for iron in making rollers for cane-mills, and in many other ways. So heavy is the wood that even after years the dry logs still sink in the water. The trees grow to an enormous size, and are cherished as shade trees because of their dense shade. The Live Oak is an evergreen, blooms profusely in the spring, and later bears abundance of acorns.

THE RED BAY.

The Red Bay is valuable mainly because of its being so durable when used for outside purposes, the weather seemingly having little effect on it. It, also, is a hard, heavy wood. Growing in the lowlands, it is full of water, and must be well dried before being used as lumber. It is fine grained and takes a good polish.

The tree grows to a good size. Both

its wood and its leaves are very fragrant with an odor similar to the sassafras. The tree blooms and produces berries which are so waxy that the settlers of olden times boiled them and extracted the wax, from which they then made candles.

OTHER WOODS.

There are other woods of both commercial and ornamental value, such as the beautiful Magnolia, which sheds so sweet a fragrance among the wild woods, and offers to the artistic eye a feast in its great creamy blossoms; the Sweet-Bay, aromatic, and yielding blooms which are as those of the Magnolia in miniature. Then there are the hard and the soft Maples, the White Oak, the Hickory, the Ash, the Elms, and many more; but as they are plentiful at the north as well as in the Southland, we need not particularize in a description of them.

It strikes one, at times, as almost incongruous, to see such contrasts as Orange and Hickory, Magnolia and White Oak, Palm and Maples, growing side by side in the wildwoods, as they do in the South; but this adds beauty, tone and a happy variation to the enjoyment of a ramble among the wildwoods of the Southland.

MARY M. STRATNER.

IN AUGUST.

We follow, follow through the lanes,
And up the pasture-way,
The August voice, whose-clear refrains
Fill all a summer's day.

We rally, rally with our kin
In dale and dingle, where
The August heart beats high, as in
The days of little care.

O, tarry in the garden-close,
And comrade with the glen,
To learn the way that August knows
Unto the hearts of men.

—FRANK WALCOTT HUTT.



THE PRAIRIE HEN.

(*Tympanuchus americanus.*)

Westward the Prairie Chicken, like the course of empire, takes its way; for although it may increase at the pioneer stage of civilization, it halts at the introduction of the steam plough and railroad, to disappear forever where villages run together into cities.

—Neltje Blanchan, in "Birds that Hunt and are Hunted."

The habits of the Prairie Hen are opposed to the ways of civilization and to its own best interests. Its range at an earlier period was much larger than at the present day, and seems to have extended quite to the Atlantic coast. Its extermination in many localities has been due to one or all of several causes. It was extensively sought by the hunter of game birds, and its apparent lack of judgment in the selection of nesting sites has also assisted in its extermination. Many nests are placed in meadows and fields where the eggs are destroyed by mowing machines or ploughed under in the breaking up of the soil. To a certain extent, their grain-eating proclivities excite the enmity of the farmers. Major Bendire states that "immense numbers of nests are annually destroyed, either by fire in dry seasons or water during wet ones." He also adds that it is safe to compute the loss of eggs from these two causes at fifty per cent.

It is evident that the Prairie Hen cannot adapt its ways so that they will not conflict with the ways of man, and in such a manner that it will to a certain extent, at least, be protected. As man has pushed his settlements westward, the range of this bird has been, and is still, gradually contracting from east to west. Major Bendire gives its geographical range as follows: "Prairies of the Mississippi Valley; south to Louisiana and Texas; west to Northern Indian Territory, middle Kansas, Nebraska, and eastern North and South Dakota; east to Kentucky, Indiana, northwestern Ohio, southeastern Michigan, and southwestern Ontario, Canada; north to southern Manitoba."

The Prairie Hen is most interesting during the mating season. The mating ceremony is so graphically described by Mr. John Dean Caton in "Forest and Stream," that we quote his words in full: "The spring of the year is the season of courtship with them, and it does not last all the year round, as it does with humans, and they do it in rather a loud way, too; and instead of taking the evenings, as many people are inclined to do, they choose the early morning. Early in the morning you may see them assemble in parties, from a dozen to fifty together, on some dry knolls, where the grass is short, and their goings on would make you laugh. The cock birds have a loose patch of naked yellow skin on each side of the neck just below the head, and above these on either side, just where the head joins the neck, are a few long black feathers, which ordinarily lay backward on the neck, but which, when excited, they can pitch straight forward. These yellow naked patches on either side of the neck cover sacks which they can blow up like a bladder whenever they choose. These are their ornaments, which they display to the best advantage before the gentler sex at these love feasts. This they do by blowing up their air sacs till they look like two ripe oranges, on each side of the neck, projecting their long black ears right forward, ruffling up all the feathers of the body till they stand out straight, and drooping their wings to the ground like a turkey cock. Now they look just lovely, as the coy, timid maidens seem to say, as they cast side glances at them, full of admiration and of love.

"Then it is that the proud cock, in or-

der to complete his triumph, will rush forward at his best speed for two or three rods through the midst of the love-sick damsels, pouring out as he goes a booming noise, almost a hoarse roar, only more subdued, which may be heard for at least two miles in the still morning air. This heavy booming sound is by no means harsh or unpleasant; on the contrary, it is soft and even harmonious. When standing in the open prairie at early dawn listening to hundreds of different voices, pitched on different keys, coming from every direction and from various distances, the listener is rather soothed than excited. If this sound is heavier than the deep key notes of a large organ, it is much softer, though vastly more powerful, and may be heard at a much greater distance.

"Every few minutes this display is repeated. I have seen not only one, but more than twenty cocks going through this funny operation at once, but then they seem careful not to run against each other, for they have not yet got to the fighting point. After a little while the lady birds begin to show an interest in the proceedings by moving about quickly a few yards at a time, and then standing still a short time. When these actions are continued by a large number of birds at a time, it presents a funny sight, and you can easily think they are moving to the measure of music."

Mr. Caton, continuing, states that this party remains in session until the sun is half an hour high, when the birds separate. They gather again the next morning and go through the same ceremony. This they repeat each morning for a week or more, or until all the birds have been satisfactorily paired. "It is toward the latter part of the love season that the fighting takes place among the cocks, probably by two who have fallen in love with the same sweetheart, whose modesty prevents her from selecting between them."

When the mating of the birds is settled, nesting is immediately begun. The nest is nearly always placed upon the ground and is a mere depression excavated by the female, who also performs all the duties of incubation. The nesting site may be in the tall grass, on the

border of a marsh, in the weeds of a fence corner, in cultivated fields or grassy meadow, or on the prairie lands in many cases where the grass is very short. The nest may be thickly lined, provided there is plenty of suitable material close at hand, the hen being adverse to bringing it from a distance. The nest is sometimes lined with a few feathers plucked from the breast of the sitting bird.

Excepting the bob-white, probably no game bird is more prolific than the Prairie Hen. Sets of from twenty to twenty-two eggs have been repeatedly found, though the average number is from ten to fourteen. Were it not for the various agents which destroy the eggs of these prolific birds, it would seem that our western prairies would soon be overstocked with Prairie Hens. One observer states that in one acre of a burned field he counted five nests which contained seventy-eight eggs, and he estimated that thousands were destroyed by fire each season. In a few instances these birds have been taught by experience to build their nests above the ground. It is seldom that any particular attempt is made to conceal the nest, for the mother bird sits so close and her colors harmonize so well with her environment, that she readily escapes observation. The mother bird, upon whom devolves all the care of the young, is a model and devoted parent, and cares for her young brood in a most courageous and tactful manner. The young leave the nest as soon as they are hatched. "Their food at first consists almost, if not entirely, of insects, and when the grasshoppers are plenty, as they frequently are in the northern parts of the breeding range, they subsist almost exclusively on them. Later they frequent the grain fields and feed on the different cereals as well as other small seeds and berries."

It is late in summer when the male parent again joins his family, and they, with other families, unite in flocks which, in regions where these birds are common, have been known to form packs numbering fully five hundred individuals. These flocks roam over the fields and prairies, feeding upon grass seeds, grains and berries. In the northern por-

tions of their range, the Prairie Hens are partly migratory; at least this is the case with the females and young of the season. The hardier males may remain to brave the cold of a severe winter, seeking the shelter of timbered lands. The birds remain in flocks until the "warmth of spring quickens their blood and awakes the passions of love; then, as

with a view to fairness and the survival of the fittest, they select a smooth open courtship ground (usually called a scratching ground), where the males assemble at the early dawn to vie with each other in courage and pompous display, uttering at the same time the love call, a loud booming noise," which has been likened to the syllables *ook-ah-oom-bou-hou-ou-ou-ou*.

SUMMER.

All night, at the door of his burrowed cell,
The cricket chirps, while the harvest moon
Swims high over pasture and stony fell,
Over farmhouse, and forest, and scented lagoon.

Swims yellow and round, through the lakes of blue,
And its light falls white on the dewless stone,
Where the rabbits hop past; and they hear the shrew
Tunneling under the grasses alone.

And the pasture tree is a crowded town,
With households hushed in its dim repose;
While its mateless and childless ones may drown
Their lonelier cares till the dawning glows.

There the beetles sleep in the bark of the bole,
And the tender bird broods till her nestling stirs,
When the saw-fly wings from the horn-borers hole,
While the squirrel calls, the opossum purrs.

Then down from the sproutlands, and breezy fells,
Where wander all day the gentle-faced sheep,
Is dropt the pensive tink-inkle of bells,
As the small feet move on the pastures steep.

—ELIZA WOODWORTH.

THE WILSON'S SNIPE.

(*Gallinago delicata*.)

Each day are heard, and almost every hour,
New notes to swell the music of the groves,
And soon the latest of the feathered train
At evening twilight come;—the lonely Snipe,
O'er marshy fields, high in the dusky air,
Invisible, but, with faint, tremulous tones,
Hovering or playing o'er the listener's head.

—Carlos Wilcox, "Spring in New England."

Probably few birds are more attractive to the true sportsmen than is Wilson's Snipe. This is due not only to the "excellence of its flesh, but chiefly from the fact that it furnishes a mark which taxes their skill to the utmost, and which no mere novice need hope to hit, unless by accident; for the bird's flight is swift and tortuous, and it springs from the grass as if thrown by a catapult."

This popular bird has quite an extensive range, covering North America in general. It is known by a number of common names: Common Snipe, American Snipe, Jack Snipe and English Snipe. It is also named, in some localities, the Shad Bird, for it appears in early spring at about the time of the blossoming of the shad bush, and at the time when the shad begin to swim up our rivers to deposit their spawn.

The natural history student who is enthusiastic enough to sally forth on a wild March day, searching for the first signs of bird migration, is apt to betake himself to one of two places, viz.: the hedge rows and woodland copse, where the robin, blue bird, meadow-lark and flicker lurk, or to the icy margin of some half thawed lake or stream. At the latter places he is apt to observe an early flock of ducks drifting about in the cold water. There, too, perhaps an over-zealous kingfisher is darting about overhead and a killdeer plover runs along the shore, repeating his name in weird notes. And along the water's edge, at intervals,

the keen-eyed observer discovers the tracks of a long-toed bird who has been feeding in the soft, sun-exposed portions of the damp earth. Numerous perforations in the soil signify that the game old woodcock or its equally vivacious relative, the Wilson's Snipe, has been boring with his lengthy beak for food. Both birds are due from their winter abodes at this season, but the Snipe is so fickle in its habits that it successfully evades many a gunner who is obliged to seek him here about the water to-day, but must look in the corn stubbles, or meadows, for his game to-morrow.

A startled Snipe springs from the ground, with a "ye-ip," "ye-ip," "ye-ip," adopting a course of flight, which is extremely irregular for the first few seconds. Unless the birds have been frequently flushed and shot at, they often fly but a short distance before alighting, when they run swiftly over the ground for several yards before settling down to feed again.

Occasionally the Wilson's Snipe breeds as far south as northern Illinois or Indiana. Mr. G. Frean Morcom, formerly of Chicago, has a set of eggs of this bird taken on the Macsauber Gun Club grounds of northern Indiana. Another nest was found several years ago in McHenry county, Illinois, by a farmer who was plowing about a damp hole in a meadow. In each of the above instances the incubating bird sat very close, and exhibited but little fear. This shore bird



WILSON'S SNIPE.
(*Gallinago delicata*).
 $\frac{2}{3}$ Life-size

also breeds commonly in the vicinity of Salt Lake, Utah. The writer has a clutch of four eggs which were taken at Long Lake, Assiniboia, Canada. They have a greenish drab background, and are spotted, blotched and scrawled, chiefly about the large end, with dark brown.

While tramping about the Calumet swamps of northern Indiana in a misty and heavy atmosphere of April, I witnessed the song flight of the Snipe. It is quite suggestive of the aerial performance of the American woodcock. I was first attracted to a grassy spot by a peculiar clucking, not unlike the notes of a Virginia rail, and presently a Snipe arose from a bog and circled about overhead. At intervals it darted obliquely through the air, producing a whistling sound, resembling the "whiz" of a missile through space. Suddenly the bird dropped to the ground and resumed his "clucking" in the presence of another bird, presumably the female. He soon took to wing again, and this time he maintained a perfectly straight horizontal course at a height of about ten feet, until suddenly joined by another bird, the two ascended into the cloudy sky together, both producing the whistling sound.

Mr. William Brewster writes as follows of this peculiar spring-time performance of Wilson's Snipe, which is usually enacted at the dawn of morning or the twilight of evening, but may be witnessed in broad daylight or even sometimes in autumn. He says: "Wil-

son's Snipe mounts to a considerable height above his favorite meadows and darts downward with great velocity, making at each descent a low yet penetrating tremulous sound, which suggests the winnowing of a domestic pigeon's wings, or, if heard at a distance, the bleating of a goat, and which is thought to be produced by the rushing of the air through the wings of the Snipe."

Wilson's Snipe is a bird that commands attention at all times, and many a farmer's boy finds it an interesting object as he traverses the swampy margins of our lakes and streams. Mr. Langille says of his own experiences with this bird: "How gratifying to childhood curiosity was it to hide away in the alder bushes and watch him as he took his morning or evening repast. See him walk—almost run—with nimble, easy steps; his long bill—schneppe—which, in the old Saxon language, gave the bird its name, pointing obliquely forward and downward, and his short tail somewhat thrown up. Now he probes the soft mud, pushing his limber bill down half its length or more, and testing almost every square inch for quite a distance around, the delicate external membrane of that strongly specialized instrument, well supplied with the most sensitive nerves, readily detecting the presence of earth-worms, or such tender roots of plants as are agreeable to the bird's taste."

GERARD ALAN ABBOTT.

A FEW BIRD HOMES.

Rain! rain! and still it rains, and I am longing to visit my bird friends and see how they are getting on with housekeeping. I wonder if the little phoebes in the home under the bank, where this spring was a landslide, have put on their sober dresses yet? The last sunshiny day they hadn't a feather to show as they stretched up their open mouths for food; and have the little birds in the white-

throated sparrow's nest, on the side hill pasture close beside the cow path, opened their eyes yet? How many eggs are there now in the blue jay's nest in the tall pine by the river's bank? There were only three when last seen.

When it began to rain the kingbirds were building in the old sweet apple tree. How I wish I knew if there are yet any eggs there! But most of all, I want to

see the home of the little black and white warbler, so cunningly hidden in the woods at the river's bank, under the roots of a tall hemlock. How the children ever found it I do not see, but there it is, and it was a red letter day for me when first I saw it.

Still it rains and so I sit down and take my old deserted homes, and go over each family history in my cozy sitting room and forget all about the dreary outside world. Would you like to look over my shoulder and enjoy them with me? You are welcome.

The first box I open shows us the home of the brown thrasher. It is made of coarse sticks, leaves and grasses, securely placed in an old scrub apple tree, where to penetrate in reach of it a sharp knife was brought into use.

Its relative, the catbird, built her nest in a grape arbor and used a quantity of the bark from the vine in constructing it, lining it with fine roots and using paper to fix the foundation. Some English sparrows were poisoned near by, and we suspect these catbirds met a like fate, for after laying four blue eggs they died and were found on the lawns, and the deserted home came to be a part of my collection.

Another relative, the little house wren, built in a box put out for the bluebirds and scolded all birds who came near the tree while her family were developing.

Let us open this box next. This is the home of the wood thrush, built of grasses and very firmly made. When I first found it there were three beautiful blue eggs in it; after two weeks another visit found no eggs and the home deserted. It was built near the edge of a wood in a young sapling pine and placed just above my head.

Beside the thrush's nest is the "dear old robin's" home. It is made of roots and mud and lined with soft grasses and was built in the old apple tree. Their cousins, the bluebirds, gave me a treasure indeed. They built their home in an old rusty tin can that once served as a flower vase in the cemetery, but discarded with other similar vases it was chosen by a pair of young bluebirds, I think, for their first home. Just as two little birds were getting uneasy to see

the world a dog came with his mistress and set the tin can rolling, much to the distress of the parent birds, who immediately removed their family to a safer locality. I think they will be wiser for the next brood and build in a higher locality.

Here in this box are the homes of the sparrows. This nest so bulky and loosely woven entirely of grasses was placed in a low bush and was the home of "The blessed little song sparrow." I was rather disappointed that so dear a friend should have so untidy a home. They often place their nests on the ground. This field sparrow's nest, not nearly as large and bulky as the song sparrow's, was also built in a low bush. This one, the home of the white-throated sparrow, was built on the ground in a hill pasture, where it was almost necessary to take a bit of mother earth with the home in order to show its real natural beauty. This, too, was a deserted nest, containing two little speckled eggs.

This large affair is the home of our British friend, the English sparrow. It was placed behind a closed blind and built of sticks, straws, rags, string and covered and lined with hen's feathers. The little English lords surely had a warm home. The prettiest sparrow's nest was made by the little chipping sparrow in the woodbine on the piazza. Twine was put out on the woodbine, which the mother used without stint, and nearly covered the outside with the white decorations. Then being so pleased with the outside appearance of her new home she flew far away and brought white horse hair for the inside lining, thus making a very dainty nest.

This goldfinch's nest is much firmer built than many members of the same family seem to deem necessary for the rearing of the little ones. This one was placed in a maple where the father sang so constantly all summer. Another relative of this same family (*Fringillidae*), the rose-breasted grosbeak, built very high up, but right back of a tree, so it was well hidden from view. This nest is made of sticks and lined with grasses; not a beautiful home for so handsome a bird.

Let us now look at the flycatcher's home. This pretty nest, so nicely cov-

ered on the outside with the refuse from the woolen mills and so nicely lined with little rootlets, was the home of the kingbird. It was built in an apple tree under which a friend of mine on warm evenings sat to milk his cow. The mother bird did not like one so near her home, and, flying at him, knocked off his hat. That was more than my friend could calmly endure, so he immediately took the nest from the tree and sent it to me. A dear price the mother paid for just showing her natural disposition.

Beside the kingbird's home is the lichen-covered home of the phoebe, a soft home indeed for little babies. This nest, too, has a history. It was built on the stove pipe in my school room during the hours when the room was deserted by the children. The birds entered through a broken window light, but when the time for incubation arrived the mother bird could not endure the noisy school room; so all her labor had been in vain and she sought a quieter place to rear her young.

During a severe windstorm this dear little dainty nest of the least flycatcher was blown from the tree, babies and all. The nest is made of vegetable fiber and feathers, a dear little home. One of the baby birds lived with us for a time, but it was a constant care, always ready to eat. The large number of flies it put out of sight seemed wonderful to us and gave us a little insight into the busy life of a mother bird with a nest full of hungry babes to care for.

This box contains the pensile nests of the vireos, so daintily made of birch bark and lined with pine needles. They are all quite similar in appearance and each hung from the fork of a tree. The solitary builds in the wood on a low bush, while the red and white eye build higher up, often in the maples near our home.

The warbling builds higher still, often in a poplar. But all are such pretty basket-like homes! And fine neighbors they are, too, singing constantly.

Of course Lord Baltimore builds the model hanging nest, but he belongs to another family and I think feels justly proud of his nicely constructed home, when he compares it with the other members of his family, the blackbirds, meadow larks and bobolinks, all of whom make their homes on the ground in the grasses. The blackbirds build in low bushes. Their nests are loosely woven structures, not at all like those of the oriole.

We have time for only a glance at these little warblers' nests. They are quite similar in appearance, all being made of vegetable fiber lined with feathers. The prettiest one of all was made by the little yellow warbler; it looked, as I first saw it on the back of the tree down by the river side, like a bunch of cotton. I just longed to take it then when it was all so fresh and dainty; but of course I had to leave it until the birds deserted it for a sojourn to the south. The blackburnian and pine warblers build in pine trees; the black and white warbler on the ground and the little redstarts, in the woods by the mill pond. This Maryland yellow throat's is perhaps the most interesting of all my deserted homes. It is a two-story dwelling, each story containing a cowbird's egg. We trust their next home building was more satisfactory.

We might go on and on. Each nest has its own family history, but haven't you become a little interested already, so that when the sun once more shines, drying the grass and foliage, you, too, will like to watch the home making of our bird friends? Then as you get the family histories you will like to take the abandoned homes and study them still more.

REST H. METCALF.

THE NESTING OF A LEAF-CUTTING BEE.

(*Megachile sapellonis*.)

Almost every garden* shows evidence of the work of leaf-cutting bees, for the *Megachiles* are very numerous, and perhaps the most widely distributed of the wild bees. They may be found in every continent and even in the Sandwich Islands. How they have spread over the earth and reached even the far-away oceanic islands would be another problem for Sherlock Holmes or a naturalist with the same keenness and zeal. There they are in every garden in the land, leaving their marks by cutting circular pieces from the leaves, as smoothly and deftly as though fairies' scissors had been used.

The nests of the *Megachiles* are fine bits of architecture. It is said that some species of the genus select holes made by beetle larvæ or other insects, and I saw a bee of this genus building in mud cells under a rock. But the *Sapello Megachile* is a true carpenter and makes its nest in fallen logs or tree stumps, cutting out its tunnel just as carefully and on much the same plan as that used by the *Clisodon*. The chief difference in this part of the work is that no sawdust is preserved but is kept flying about as though in a small hurricane, as the bee cuts away with her strong sharp mandibles.

When the tunnel is finished and cleaned the cells are made. These conform to the shape already marked in the excavation, and look much like a child's thimble though they are slightly broader at the bottom than at the top. The cells are made from pieces cut from the leaflets of the wild rose, which grows in such

luxuriance in the canyon. The roughly circular pieces are nearly a fourth of an inch across and twenty or more pieces are used in forming each cell, carefully arranged in rows and fastened together by a gummy substance.

The cell when finished is half filled with pollen, which the bee gathers from the flowers which are abundant indeed at the mid-summer season, the time when the bee nests. The pollen mass in the cell is quite different from that provided by the other bees, whose nests I have studied; for it is dry and odorless and when examined under the microscope shows the characteristic shapes of the pollen grains—tiny footballs, green and yellow lay among spiked yellow globes and light green crescents.

The egg is placed on top of this food-mass, a rose leaf lid is firmly glued to the top of the cell, and if no parasite has placed its egg in the cell during the *Megachile's* absence, the young bee has a safe and comfortable place in which to pass its youth.

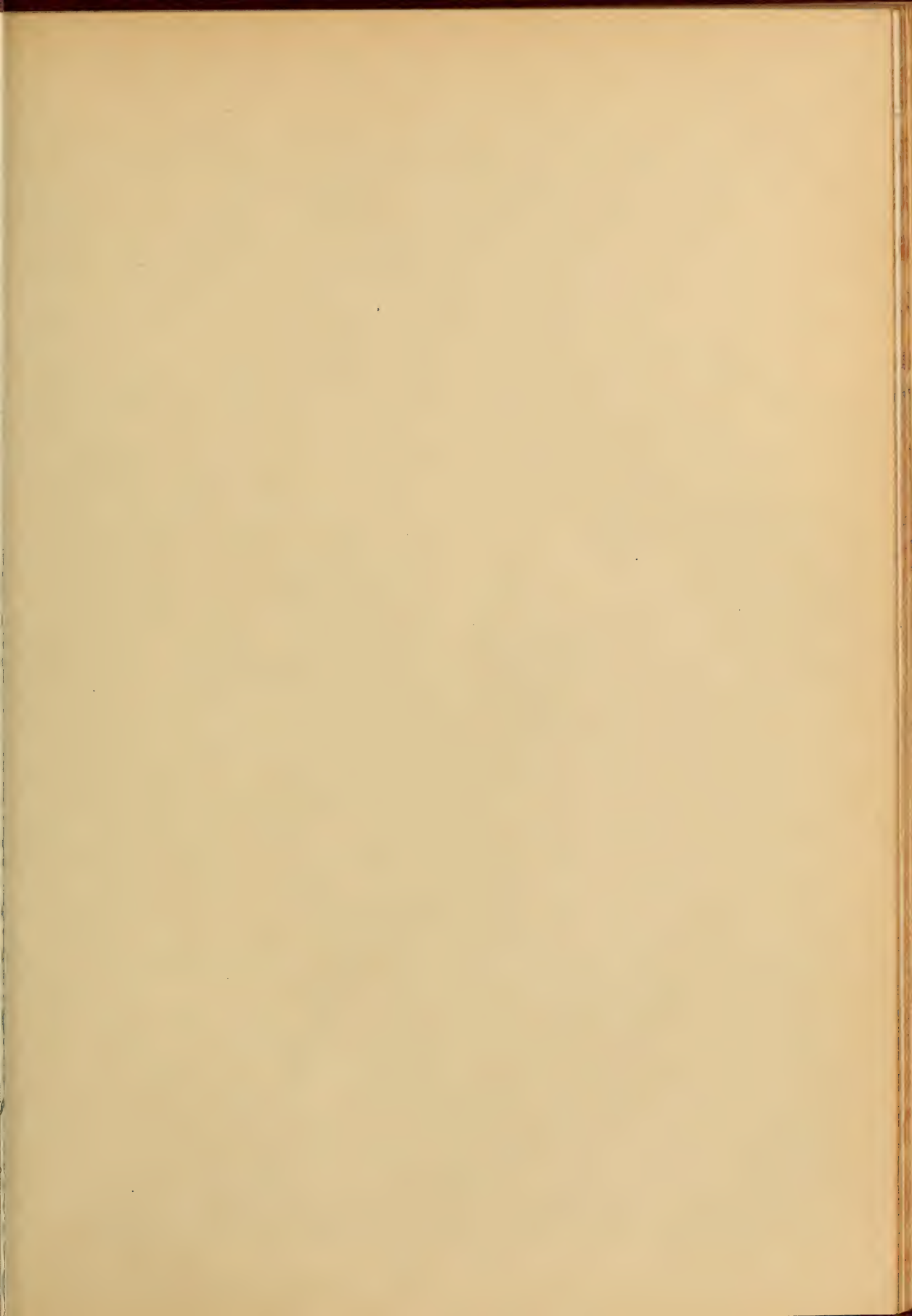
As is seen from the pollen in the nest, the *Megachile* visits many different flowers, but it does not fly first to one species and then to another, but visits many flowers of the same sort, a marvelous adaptation which aids in the development of the plants. The legs are without the baskets of the bumble-bee and are covered with short rather sparse hairs, but the pollen is carried in the branched hairs under the abdomen, which are thick and long, making an admirable arrangement for holding pollen.

WILMATTE COCKERELL.



A. W. Mumford, Chicago

SUGAR MAPLE





FROM COL. F. M. WOODRUFF.

KENTUCKY WARBLER.
(*Geothlypis formosa*)
Life-size.

COPYRIGHT 1900, BY A. W. MUMFORD, CHICAGO

THE KENTUCKY WARBLER.

(*Geothlypia formosa.*)

The Kentucky Warbler has been called a "distinguished warbler," for it is unlike any other bird; "its ways are its own, and its personality most marked." An exceedingly shy bird and possessing a wild disposition, it frequents heavily wooded localities which are also covered with a dense undergrowth. Even in these retreats it spends much of its time *walking* upon the ground searching for its insect food under leaves, stones and other materials upon the forest floor. Its habitat is in reality nearer the ground than is that of almost any other bird. Then, too, the Kentucky Warbler is loth to exhibit its bright plumage and retreats from the presence of an intruder. Only the quiet and patient student of bird life may hope to make its acquaintance and know its habits.

However, the male cannot resist the pleasure of pouring forth its song, especially during the early days of the breeding season. At times he will sing for hours, though as a rule he is heard and not seen, for his song perch is seldom higher than the lower branches of the forest trees. Mr. Chapman has described the song as "a loud, clearly whistled performance of five, six or seven notes—*tur-dle, tur-dle, tur-dle*—resembling in tone some of the calls of the Carolina Wren. That he is a persistent singer is well shown by the experience of Mr. Chapman, who watched a male for three hours. "During this period, with the exception of five interruptions of less than forty-five seconds each, he sang with the greatest regularity once every twelve seconds. Thus allowing for the brief intervals of silence, he sang about 875 times, or some 5,250 notes. I found him singing, and when I departed he showed no signs of ceasing." He finds so much pleasure in singing that often when frightened from one perch

he flies to another and resumes his song as if no interruption had taken place.

The range of the Kentucky Warbler includes the eastern United States and extends westward to the Great Plains. Its breeding range extends from the Gulf of Mexico northwards to southern New England, southern Michigan and southern Minnesota, and it winters in the West Indies, eastern Mexico and Central America. The nest of this delicate little bird is a bulky affair, constructed with leaves, grasses, twigs and rootlets. It is usually lined with fine rootlets, and sometimes with hair. Like the nests of the other ground-nesting warblers that of the Kentucky is quite difficult to locate. The site selected is on or near the ground, and may or may not be concealed by foliage, or the roots of fallen trees. Damp woods are usually chosen for the nests and they are generally placed near the bottom of ravines rather than on the hillsides.

While the Kentucky Warbler possesses marked individual characteristics, it may be easily mistaken for the Maryland yellow-throat. The two species are similar in size and color, but the yellow line over the eye, the black crown and the continuous bright yellow under parts of the Kentucky Warbler are sufficient marks to distinguish it from the yellow-throat. Then, too, it *walks*.

Mr. Leverett M. Loomis records, in the Auk (April, 1890), the following observations regarding the habits of the Kentucky Warblers as he saw them in Pickens county, South Carolina: "Indifferent to elevation, these Warblers are everywhere abundant in the wooded hollows, coves, and ravines; these shady retreats constituting their true haunts, though during the cooler hours of the day individuals stray from the near proximity of the water courses to the sunny

slopes of the adjacent hillsides. During the height of the season they have few rivals in persistency of song, but as June advances, and the young begin to be abroad, they sing with rather less frequency, though not with less force and spirit. Besides their loud chant, so commonly uttered, I think they have a second and more pleasing song, but of this I cannot speak with certainty, as I have never succeeded in detecting one in the act of singing, for the song was

repeated only at rare intervals, and always in the seclusion of the rhododendrons, but each attempt to discover the author invariably developed a Kentucky Warbler in the spot whence the sound had issued. When their haunts are invaded, they resent intrusion with loud querulous chirps, which are as distinctive as their song notes. Though of retiring disposition, especially early in the season, when their young are hatched, they often challenge observation by exhibiting themselves with boldness."

SEPTEMBER AND OCTOBER WITH THE CALIFORNIA WOODPECKER.

I caught my first glimpse of Mr. and Mrs. Redtop, while they were eagerly drilling through the bark of a big, yellow pine tree, in one of the many beautiful valleys which lie snugly hidden in the heart of the San Jacinto Mountains, and are such delightful spots in which to study "Nature in the wild."

Great, rugged peaks tower over this valley, which is at an altitude of 5,250 feet above sea level. In and around it the huge yellow pine and graceful white oak grow side by side in close companionship.

Cedars, sugar pines, balsam firs, and various other trees grow in countless numbers, making a great natural park wherein man can rest and enjoy the solitudes of the forest.

Cold, sparkling streams hurry through deep canyons, stopping to rest a while in some shaded pool, where beautiful lacey ferns droop over, then rushing out again, as the bed of the stream slopes more abruptly, they splash over fallen trees (veritable giants), small stones and immense boulders, in mad haste to reach their destination.

Truly an ideal place for the woodpeckers to abide in! And, indeed, they seemed quite capable of taking on the responsibility of ownership, giving out their orders as if they expected them to be obeyed.

Having come to a standstill just under a tree in which the two were busily engaged, I proceeded to study them through my glass and paid little attention to their loud commands to "move on." I became much interested in their queer ways of getting at the food, and in the accomplished manner with which they hammered and drilled with their long, strong beak.

Many of the pine trees were fairly riddled with holes. One yellow pine had been drilled so full of holes that there was hardly room for the tip of a finger between the borings.

I noticed that the borings were entirely confined to the bark—which is often over an inch thick—and never extended into the wood of the tree.

It was during the last week of September I first discovered that they were putting in their supplies for the winter. Several days I watched one pick his acorns, and store them away in a safe place. He would pick the acorn with much dexterity, fly to a convenient branch where he would hold it firm with his feet so that he could remove the cap. This being done he would select an excavation of about the right size, and hammer it in till only the tip of the acorn was in sight. Usually the end from which the cap had been taken was inserted first.

This California woodpecker is quite a showy bird. One came to grief—I know not how—but I found him lying dead near a barbed-wire fence while on one of my long rambles.

General colorings are black and white with a jaunty scarlet cap on the head and a dash of yellow at the throat. In some lights the back looked a glossy greenish black, in others a lustrous blue-black. White bars show on the wing in flight. Breast is white, flecked with black on lower part and on the abdomen. Male and female appear very much alike in their markings.

They are exceedingly industrious, much given to chattering as they work, and very

aggressive toward the smaller birds, who may presume to venture near their domain. Long before King Sol had climbed the granite peaks and sent his sunbeams chasing each other on the roof of our tent, the woodpeckers were at their day's work.

By the chips in shape of acorn caps under the white oaks, one is lead to believe that they are good workers.

A tree is soon stripped, and not an acorn left any poor, wandering squirrel.

I left them the last of October still actively putting in provisions for the cold weather, and I hoped no hard storms would interrupt their harvesting.

ELNORA MOODY.

A WEED.

Because I scatter my seed
Prodigally and grow
Where the wind has chanced to blow—
You call me a weed.

I look at your gardens fair
With flowers in tidy rows,
And my wild little seed-heart knows
I could never be happy there.

My mother was gypsy born,
My father a roving bee,
There is vagabond blood in me—
I am not to be trained and shorn.

I am poor and mean indeed
But I make the waste place glad
And the wayside color mad
Where there is room for a weed.

—LOUISE DRISCOLL.

THE YELLOW-BREASTED CHAT.

(*Icteria virens.*)

Aloft in the sunny air he springs;
To his timid mate he calls;
With dangling legs and fluttering wings,
On the tangled smilax falls;
He mutters, he shrieks—
A hopeless cry;
You think that he seeks,
In peace to die;
But pity him not: 'tis the ghostly chat,
An imp, if there is one, rest sure of that.

—Charles C. Abbott, "Waste Land Wanderings."

If from an ambush one is permitted not only to watch the strange actions of the Yellow-breasted Chat, but also to listen to its mixture of calls; whistles, squawks, carols and scoldings—an "odd jumble"—he will hardly believe that he is watching and listening to one of the wood warblers. But such is the case. In structure the Chat is a warbler and truthfully belongs to that family, yet its song is not a warble. Instead, the Chat produces the most peculiar medley of sounds than can emanate from the throat of a bird. The Chat is a "feathered oddity," and in its actions and voice is only like its fellow chats. Mr. Chapman has written the following words regarding this bird: "After an acquaintance of many years I frankly confess that his true character is a mystery to me. While listening to his strange medley and watching his peculiar actions, we are certainly justified in calling him eccentric, but that there is method in his madness no one who studies him closely can doubt." The Chat is an aerial gymnast, but it performs only when it seems satisfied that no intruder is in the vicinity. One of its acts, especially performed during the nesting season, is to launch into the air from its retreat, and, uttering a loud note, reaching a height of several feet from the ground, it holds its wings above its back and with dangling legs allows its body to descend as it rose, by a swinging and jerking motion, into the

shrubby from which it ascended. It is the male which performs in this manner, and as he exhibits fear and anger at the time, it may be done for the purpose of frightening a supposed enemy. If this is the purpose of the bird, it is surely a mistake, for the exhibition of anxiety and boldness by a bird which is ordinarily shy is quite a positive indication of the presence of its nest. Mr. Keyser says: "It is odd that these birds, shy and nervous as they are, should go so far out of their way to tell you that they have a nest somewhere in the copse that you mustn't touch, mustn't even look for. While you are yet a quarter of a mile away, they will utter their loud cries of warning; and if you go to the thicket where they are, you will be almost sure to find their nest, so poorly have they learned the lesson of discretion." The male shows a strong attachment for his mate and her nest. During the time she is sitting upon the eggs, he seldom goes beyond the limits of the bushy area in which his home is situated. In the presence of his mate he sings his best. There he performs his clownish feats and turns aerial somersaults, voicing, the while, his eccentric medley. "Indeed, some of his most varied performances are inspired by the happiness he experiences in the little home ensconced among the subjacent branches."

The Chats frequent the bushy undergrowths at the edges of forests, large



YELLOW-BREASTED CHAT.
(*Icteria virens*)
 $\frac{1}{3}$ Life size.

COPYRIGHT 1903. BY A. W. MUMFORD, CHICAGO

fields covered with a shrubby growth and the bush-fringed borders of swamps and streams. They do not like thick forests of large trees. Their nests are usually placed very near the ground and generally in the most tangled portion of a shrubby patch. In such places the nest is well screened by the adjacent foliage and quite well protected from discovery were it not for those "delirious calls and ludicrous motions of the male," which he usually executes very near his home. The nest is a bulky affair, constructed with grasses, many dried leaves, weed stems and strips of fibrous bark. These with other materials are well woven together in the building of the walls. The nest is lined with finer grasses and small flexible roots.

All the acts of the Chat are indeed unique among birds. "However much of a tease and a deceiver he may be to the passer-by along the roadside, in the privacy of the domestic circle he shows truly lovable traits." Neltje Blanchan also writes: "The catbird and the mocking-bird are rare mimics; but while the Chat is not their equal in this respect, it has a large repertoire of weird, uncanny cries all its own—a power of throwing its voice, like a human ventriloquist, into unexpected corners of the thicket or meadow." Indeed, so peculiar and so wonderful are the numerous voice-phases and physical actions of the Chat that the many adjectives in the English language may easily be used in an effort to properly portray them.

THE GOOD OLD EARTH.

Some think that the world is going astray—

A planet to ruin drifting,

Because in the lowering skies alway

They cannot perceive the rifting:

But yet the earth is a good old earth,

And faithful to frond and feather,

The flowers will spring, and the birds will sing

As long as it holds together!

Some fear that the rain will rot the roots,

Or the rust will blight the barléy,

That the drought will damage the young corn shoots

If the sun won't hold a parley:

But yet the earth is a good old earth,—

A true and a tender mother,

And none need fear for the blade and ear

As long as it holds together!

Some say that the world has homely grown,

And callous, and cold, and prosy,

That now its ways are with ashes strewn

That once were so smooth any rosy:

But young hearts find it is warm and kind,

And whisper to one another—

Love still doth reign o'er the earth's domain

And will while it holds together!

—MRS. M. A. MAITLAND.

THE AUNT JANE STORIES.

VII. CURIOUS FRUITS.

A carriage crossed the bridge. The children heard it, and went flying down the front lawn. "Here she comes! Here she comes!" they shouted, as they opened wide the big gate. The carriage stopped, after passing through the gate, and was soon full of boys and girls, all laughing and asking questions; for Aunt Jane had been away on a visit and was now just returning to Woodland.

"I've found a basket under this seat," cried John, "full of bananas and oranges."

"Good, good," said Madge; "we'll sit up till 'leven o'clock, eating nuts and fruit."

As Aunt Jane alighted each child seized a bundle or basket, thinking "maybe it contains something for me," and, relieved of everything, their aunt was triumphantly ushered into the house, and the basket of fruit sent to the dining room to be opened. How impatiently the children listened for the bell to ring; and how late it was when supper was finally over, with piles of banana and orange peel on every plate.

"I'd like to live in the city just for the sake of the fruit," said Edith.

"That is what your city cousins say about the country. You should hear them praise country strawberries and the 'thimble' or raspberry. They agree with the poet:

"Rich is he who asks no more
Than of blueberries a store."

"Now, Auntie, you know very well that the country has only common fruit, and I should like to live on tropical fruits."

"You have a fruit which somewhat resembles the banana. Don't you remember what a fine basket of pawpaws John gathered this fall? Then there is our persimmon, too, which looks like grand-

ma's old-fashioned reticule tied up full of sweets, if only you do not take it too soon. But, by the way, we should remember that our so-called pawpaw has no claim to this name, for it is really the custard apple. The pawpaw is a tropical fruit; it is somewhat like a melon, oblong in shape, and is eaten raw with salt and pepper."

"The name pawpaw is Indian, is it not?" Howard asked.

"Of course," cried Bird; "don't it sound like papoose?"

"Hold, not so fast," said Aunt Jane; "the word is French, from 'Carica papaya.'"

"The 'custard apple,' if I must call things by their right names, is not so good as the banana," objected Edith.

"It does have a disagreeable smell and taste until extremely ripe," Aunt Jane responded; "but, then, the soft, custard-like pulp is considered delicious by many people. There is one curious thing about the fruit—only man and the opossum will eat it; even hogs refuse it, no matter how ripe, I have heard. The custard apple is never cultivated, but grows wild in the forest. The tree is sometimes from twenty to thirty feet high, but is seldom more than four inches in diameter. The leaf is large, widest toward the point. The flowers are brown with a light yellowish tint at the heart. They are bell-shaped, and open in April."

"Our custard apples grow on mere bushes," said Howard, "and the wood is bluish and the bark smooth."

"The custard apple has big brown seeds, and the banana—why, I never saw a seed in one. How do they grow?" Edith asked, in a surprised tone.

"The banana is propagated by suckers. Kingsley says there is but one place on the globe—the Andaman Islands—

where the banana produces perfect seed. The banana must be a very old fruit, for it has been seedless for thousands of years."

"I'd like to know how it got to America; it must have been brought before Columbus came," said Alice.

"Yes," responded her aunt; "it must have been brought, it is thought, by that strange people from over the sea of whom the Aztecs had a tradition; but, be that as it may, it is at least probable that it is the first plant that was ever cultivated, and more people now live upon the banana than upon flour. Humboldt says that nothing gives so much food to the acre as the banana."

"To what order of plants does the banana belong?" Alice enquired.

"It is a developed tropical lily; by cultivation the seeds have been eliminated and the fruit enlarged. Both beast and bird are fond of this fruit, as well as man."

"I'd like to know," said John, "if there is any other fruit that has gotten rid of its seeds?"

"Yes, indeed; can't you think of one?"

"Not I," said John, shaking his head.

"We can, we can," cried the girls; "we seed raisins, but not zante currants; they are seedless."

"But our currants are seedy," objected John.

"Zante currants are really a species of raisins," Aunt Jane explained. The name comes from Corinth, the place of shipment, and is changed into currant; they were called *raisins de Corauntz*."

"Are there any other curious apples beside the custard?" Alice inquired.

"Growing at Key West," was the reply, "there is a fruit of which a writer says: 'And what is this, like an ever green peach, shedding from the underside of every leaf a golden light—call it not shade?—a star apple.' This fruit is round and smooth, with a greenish or purple pulp, as there are two kinds. The core is white and is shaped like a star. It contains several seeds as large as pumpkin seeds. This sugar apple grows at Key West on bushes. It is cone-shaped, has a scaly rind and creamy yellow pulp which tastes like sweet custard."

"How easy cooking must be," said Alice, "when custards can be gathered from a tree. If I lived at Key West I think I should every day invite company to tea."

"You might add 'sour sop' to your bill of fare," suggested Aunt Jane, "but you would have to send to the Spanish West Indies for it."

"Think of gravy growing on a tree," exclaimed the boys.

"Sour sop is a fruit—*Anona muricata*—which weighs from two to four pounds. Its juicy pulp tastes like a ball of cotton soaked in turpentine, until a person gets accustomed to it, when it is considered delicious and refreshing as lemonade."

"I have an idea," interrupted Bird.

"Do listen," said John; "it is something unusual for Bird to have an idea."

"You saucy boy! This is my idea, and you will all agree that it is a good one, too. Let us help Alice set her tea table. She already has custard, sour sop or a new kind of lemonade. Now I'll furnish the bread. It grows in Polynesia and tastes like Yorkshire pudding. Papa told me that it grows on trees, though it is as large as a small pumpkin. The tree bears eight months of the year. The rind of this fruit is rough, the pulp white and fibrous and looks like fresh bread, but it must be roasted before it is eaten. So Alice will have a little cooking to do."

"No, she won't," cried Howard. "I'll run over to Egypt and bring her some monkey bread—it does not need cooking."

"What is monkey bread?" inquired Alice. "I fear from the name it is not nice, and I want my guests to have a good supper."

"Do describe it, Auntie," said Howard. "I confess I know nothing about it but the name."

"It grows on a very large tree in Africa. The fruit is nine or ten inches long, about four inches in diameter and is pointed at the ends. The pulp is farinaceous and the taste is acid."

"I won't have sour bread," cried Alice.

"Then, Howard, you can get a jaca or jak, which is a fruit allied to the

bread fruit, and a single one often weighs thirty pounds. However, it is the seed, of which there are hundreds which are eaten. But I think, after all, that the jak is rather large; so suppose you get the carob or St. John's bread. It will not be especially toothsome, but it has Scriptural associations, as it is said to be the locusts that John fed upon in the desert, and it is also supposed to be the husks of the prodigal son."

"Capital," said Alice, clapping her hands. "I'll take all the different kinds of bread, and my company may choose which they will eat, but I know John will feed upon the husks."

"To pay you for that," said John, "I will now make my contribution. I will bring you a dish of Australian cherries, which are monstrosities, for, contrary to the usual order of things, you will find the stone, or pit, on the outside of the pulp and closely adhering to it. I will also add a basket of 'wooden pears' from the same country. The tree on which they grow is hard as stone, and the fruit hard as wood."

"Why, Auntie," said Edith, "I thought such a country as Australia would be famous for fine fruit."

"It is said," was the reply, "that, while Australia contains nearly one-fifth of all the known species of plants, it is yet really deficient in fruits that are adapted for food."

"My fruit is the most curious of all," said Madge. "My teacher told me about it. She says it grows on the love tree in Brazil. The flower is like a calla lily, with a delicious perfume added. It takes the fruit all the year to ripen. It looks just like the ear of a large cow in shape, and it tastes like all sweet fruits, such as pine apple and peach put together, but has also a little taste of pepper."

"Good, Madge. I'm much obliged to you for this new fruit. It shall be passed

as dessert just before the wooden pears," said Alice, glancing shyly at John.

"Your syrup might be made," said Aunt Jane, "from the saguaro cactus. The stems of this accommodating tree split into poles which the traveler uses to knock down the fruit, as it grows very high. You can also make a nice drink from it, like chocolate. For preserves I would suggest the guava and mango. As you are fond of banana and pine apple, you must not forget the 'ceriman,' which has the flavor of both and is superior to either. This fruit is produced on a half-climbing plant, and a curious thing about it is the fact that it expands its spadix of flowers so fast that heat is produced which may be tested by the thermometer. The Mexican tuna is a cactus fruit with a double flavor—that of watermelon and strawberry."

"Alice," said Edith, "I've been searching the botanical dictionary and I can't find a curious fruit for your tea table unless you will accept one that is called the 'Queen of Fruits,' but I'll tell you now that it smells like onions—yes, like rotted onions—but the taste is delicious. A writer says that to taste 'durians' is to have a new sensation."

"Let us have durians, then, by all means," said Alice. "We will not bring them on until the last thing, and we will set the table out of doors."

"You have enough variety now for one supper," said Aunt Jane, "so we will conclude our ideal bill of fare of curious fruit with a reference to our common fruits, which are, after all, the best for us. Professor Asa Gray says in the strawberry we eat the receptacle or end of the flower stalk; in the raspberry a cluster of stone fruits like cherries on a small scale; and in the blackberry both a juicy receptacle and a cluster of stone fruits covering it."

BELLE PAXSON DRURY.



THE SNOWY HERON.

(*Ardea candidissima*.)

The fatal gift of beauty.—Byron.

In every land
I saw, wherever light illumineth
Beauty and anguish walking hand in hand
The downward slope to death.

—Tennyson.

Perhaps no class in literature, however bright and eager and alert, could comment quite so feelingly concerning these quotations as could our White Herons if they only had a voice in the discussion; for true as these expressions have been concerning human history, they have been still truer in the history of bird-life, and true as they have been of bird-life in general, they have been still more pathetically true of these unfortunate birds.

The smaller of our two species of egret, the Snowy Heron, is not a well-known bird in the northern parts of our country, for he is one of the more tropical members of the family, and his usual range is from southern Indiana to Argentine Republic and Chili. Occasional stragglers do sometimes venture as far north as Nova Scotia and Minnesota, but the most northern breeding place is along the lower Wabash, and the birds found north of this are adventurers beyond the usual limits.

The Snowy Heron can be distinguished from our other White Heron, the American egret, by its smaller size (it is about two feet in length), and during the breeding season by the fact that its ornamental plumes are curved, and not straight. Another peculiarity of the bird is the fact that its legs are black and the feet yellow, a circumstance that gives this part of its anatomy an odd, contrasty effect. Like the other herons, this bird is fond of marshy places and the edges of ponds and swamps, where it feeds on the animals found near the water's edge—frogs, crawfish, fishes and aquatic insects. So far as its food is concerned it could not be said to be either particularly helpful nor injurious to human interests.

It does not possess the stateliness characteristic of most of the members of the family, and in comparison with them seem rather short and dumpish. It strikes one as being graceful rather than dignified. The nests are made of sticks, and are built in rushes, bushes or trees in swampy places, and the birds always associate in colonies when they build.

Leaving human relations out of consideration, the Snowy Heron stood as many chances of survival as most birds, and perhaps even more, for it had few natural enemies. With man upon the scene, however, there are few creatures against which the hand of fate is so severe. Among the combination of circumstances that threaten its extinction is the fact that it is during the breeding season—when its death means also the death of the next generation by starvation, that it is most relentlessly pursued, because it is at that time it wears the coveted plume. Another circumstance to its disadvantage is the fact that it nests in colonies, so that to find one, means to find several, and at a time, too, when the birds are particularly unlikely to seek refuge in flight, as this would mean a desertion of their homes.

It is perhaps to the bird's disadvantage, too, that it is only the plumes that are desired, for even after public sentiment is educated to a point when to wear a dead bird on one's bonnet is a sign of bad taste, savoring too much of slaughter, a few plumes are an innocent-looking bit of decoration, and do not hint at the tragedy behind them. In society, where a scalplock would not be tolerated as a decoration, one may wear jewels obtained by murder and robbery.

H. WALTON CLARK.

BIRDS AND BOYS IN NORWAY.

Before we came to our Wisconsin home Hjalmar and I were school friends in our native country, Norway. Had you started to school with me some beautiful summer morning, you would have waited at Hjalmar's father's gate until our little friend came running out to accompany us, and this is what you would have seen had you looked around you as you stood waiting. A hilly country with here and there a level plain, and not very far apart for the farms in Norway are much smaller than those of Wisconsin—you would have seen neat farmhouses, sided and painted white, and outbuildings invariably painted red. The few log houses are built in a much more workmanlike manner than are American log houses. From the highway there are roads leading to the farmhouses and many of these roads are lined on both sides with trees and form beautiful avenues. Many of the little homes are surrounded by trees, and sometimes right in the middle of a field are groves of birch, ash, poplar and rowan trees. In the distance on a level stretch of land is the schoolhouse. It contains not only a room for educational purposes, but also other rooms in which dwell the teacher and his family. In front of the schoolhouse is a large hill covered with trees; at the foot of the hill is a small river, "baek," we Norwegians call it, and the word has its equivalent in the Anglo-Saxon "beck." Back of the schoolhouse are fields and further back a large forest of pine and spruce. If you had gone into the forest you would have found isolated farms surrounded on all sides by woods. The loveliest thing in all the landscape is a little lake about one and one-fourth miles long, and from one-fourth to one-half a mile wide. Into

this lake flows the baek, of which I have spoken. In some places the banks of the lake are high and steep, in others low, and the fields extend down to the water's edge. Here and there the elms and willows bow their branches down to the water and when the waves are high their green leaves are wet with spray. In school Hjalmar and I occupied a seat with two other boys. Each seat was made large enough to accommodate four pupils, and a desk extended in one piece across the entire length of the seat. In school we were subject to very strict discipline but this only increased our zest for sport, and we found many ways in which to amuse ourselves, even in the long, inclement winters. Then when all the hills were clad in deep, soft snow, we spent most of our spare time, when the weather was not too cold, gliding down them on skis. Our skis were from six to ten feet long and about six inches wide. We used to build high jumps in the hills, and in going over them we would sometimes fly in the air from twenty to thirty feet before striking the snow below. This was considered a wonderful feat for boys of our age, but before we acquired such expertness we met with many falls and were many times buried deep in the snow, and as our skis were tied to our feet it was sometimes very hard work to extricate ourselves.

In the spring when the snow was melting and running down the hillsides, in little singing streamlets, we used to build dams to back up the water so as to furnish power to run our water wheels. We attached to each wheel a wooden hammer and on a stick driven in the ground we hung a piece of tin or other metal, just far enough away so that the ham-

mer would strike it every time the wheel revolved. We sometimes had as many as ten wheels all in close proximity to each other and all in operation at the same time. The noise made must indeed have been a thunderous one, and I think Thor himself could not but have listened with admiration to it; at least he could not have been any prouder of his hammer than we were of ours. I doubt if ever an engineer watched his machinery with more interest and care than we our water wheels.

The forests of Norway are, as is well known, a great field for feathered game and the food thus procured is an important item among the rural people as is also the fish supply. In the spring when the flowers have not yet awakened from their "trylleslummer" and trolld and nisse are busy out in the forest among the "naaletraerne," or needle trees, as the pines are called, and under which the snow is yet lying, there are bare places on the marshes from which all the snow has disappeared. These bare spots are used as battlefields by the heath-cocks. One day about the middle of April, Hjalmar and I went to the woods for the purpose of locating such a battle ground. We found many bare places but none which showed any signs that fighting had taken place. At last we found one which we judged, from all the blood and feathers in the withered grass, must be a meeting place for the feathered warriors. We went to work and built two huts of spruce boughs, at opposite edges of the marsh, so that we might have a shelter from behind which to watch a fight unnoticed by the birds, and of course with the intention of shooting some of them for our dinner.

Next morning before "morgenskaer" or peep of day we started for the marsh, for we had to take possession of our huts while it was yet dark and before the birds had come out of the woods, as nearly always they are early risers. It would be useless to endeavor to get within range of them after they were once down on the marsh, for the hens in the "kratten" or thicket near by would give a warning cry for the benefit of the fighters if an enemy were seen approach-

ing. These hens made me think of the Roman maids and matrons of olden time; for I had read in a book at school how they sat in the ampitheater and watched the gladiators in combat. We crawled into our huts and waited patiently for dawn. Just as the sun rose, casting his rays among the evergreen trees and making the icicles on them sparkle in all the colors of the rainbow, a large, black, bird came out of the woods and alighted on the marsh, and with his "tsju, tsju," challenged the other birds. One after another they came out on the marsh and soon the battle was in full progress, and it was a fight for life or death. Two of the fighting birds came so near my hut that at one time I could almost touch them had I reached out my hand. I did not shoot, for the shot would have torn the birds in pieces. I waited until they were a suitable distance away and then fired, making a sudden end to both their belligerent careers. The report from my gun scared the other birds and they flew away to the trees near by. We remained in our huts and before very long a bird came back as full of fight as ever. Again the battle raged fiercely; two of the plumed knights were in the heat of the fray nearing Hjalmar's hut when I saw a blue smoke followed by a sharp, loud report, and the dark, damp marsh was drinking the life-blood of two more warriors. The remaining birds again flew to the trees. The day was now somewhat advanced; we still stayed in shelter however and awaited developments. Before long a bird braver than the rest ventured out. He challenged the others in every manner possible, but his challenge was not accepted. Hjalmar fired at him but did not kill him, only broke his wing. He vainly tried to fly and then took to his feet, making remarkable speed; he seemed to realize he had to make an effort for his life. Hjalmar leaped out of his hut with a bound and fired twice in rapid succession, but the distance was too great. Sir Tetrao Tetri, with his broken wing, soon vanished among the trees. Hjalmar and I picked up our dead birds and started home well satisfied with the events of the morning.

MARY GRANT O'SHERIDAN.

THE WESTERN FOX SQUIRREL AND ITS RELATIVES.

(*Sciurus ludovicianus*.)

Squirrels have been very aptly designated the "principal ornaments of a forest." Their presence certainly greatly increases the pleasures of those who enjoy rambles through quiet sylvan retreats. It is not alone the stately forest that is honored by the presence of these graceful creatures, for some species frequent the parks of our larger cities and the tree-bordered avenues of our villages, there delighting all with their playful gambols and interesting antics.

Whether upon the ground or among the tree branches, squirrels are active and nimble, and their large and brilliant eyes seem to reflect the high degree of intelligence which they possess. During fine weather and in the daylight hours, these bright animals seem almost constantly in motion, as if an over-abundance of nervous energy must be released. This energy is often expended in a playful manner. Though they can easily jump from the branches of a tree to those of another, they will frequently rapidly descend, and jumping over the ground to the next tree, they quickly ascend to its topmost branches. The true squirrels have been called the "monkeys of the woods of temperate climes." Neither walking nor running but moving by longer or shorter jumps, squirrels gracefully progress over the ground at such a rapid pace that even a swiftly running dog can scarcely overtake them.

These arboreal animals, as well as their relatives, the ground squirrels, are so well known that no description of them seems necessary. They are found in the tropical and temperate regions of the whole world, excepting in the Australian region and in Madagascar. However, the number of species and of individuals are much greater in the tropics than elsewhere.

They vary greatly in size and all the species have similar habits. In Borneo there is a squirrel which is no larger than a mouse and the black and yellow species of Malaysia is as large as a cat. They reach their highest degree of beauty in the tropics, and the Malayan species are brilliantly marked. One of the Oriental species "presents almost the only known instance among mammals of the temporary assumption during the breeding season of a distinctly ornamental coat, corresponding to the breeding plumage of birds." At this period, lasting from December to March, its back is a brilliant orange-yellow, but during the remainder of the year the squirrel is of uniform gray color. Some of the American species undergo a seasonal change in colors, but this change seems to be for protection rather than sexual ornamentation.

Squirrels are noted for their cleanliness. They are constantly licking and dressing their fur, which is always in an immaculate condition, and looks as if it had been carefully combed.

Squirrels usually feed upon a vegetable diet, but they are also very fond of flesh and will often attack the smaller rodents. They will also hunt for birds and rob their nests. They are almost constantly searching for food, and nearly all the species cache all that they do not need for immediate use. Food may be hidden almost anywhere but the usual places are the holes in trees or under their exposed roots, in one of their nests, in crevices in the bark, and in holes in the ground which the animals have excavated themselves. These holes are usually dug in rather secluded places and the stored food is carefully covered. It is said that in the forests of Siberia the squirrels store mushrooms in a most pe-



FOX SQUIRREL.
(*Sciurus ludovicianus*).
About 3 Life-size.

COPYRIGHT '90, BY A. W. MUMFORD, CHICAGO.



culiar manner. A writer says: "They are so unselfish that they do not think of hiding their supply of mushrooms, but pin them on the pine needles or in larch woods on the small twigs. There they leave the mushrooms to dry, and in times of scarcity of food these stores are of good service to some roaming individual of their kind."

All their senses are especially well developed. Even when asleep in their nests, a suspicious sound will awaken them and they are immediately alert and active. Even the early Latin and Greek writers appreciated the keenness of their powers of perception. Pliny says: "The squirrel, also, has the power of foreseeing storms and so, stopping up the hole at the side from which the wind blows, it leaves the other side open." Regarding their habit of storing food, he says: "It appears, therefore, that some animals lay up a store of food for the winter, while others pass the time in sleep, which serves them instead." While timid, they also have a vein of curiosity. It is interesting to watch their antics when frightened by an intruder in their haunts. Slyly and cunningly they retreat and like a flash dart to the highest branches of some neighboring tree, into a hole in its trunk, or into their nests; but they cannot resist the temptation to peep at the intruder from their retreat. Mr. Longfellow speaks of this habit in "The Song of Hiawatha":

From his ambush in the oak-tree
Peeped the squirrel, Adjidauno,
Watched with eager eyes the lovers.

While young, all squirrels are playful, full of energy and keenly delight in being petted. As they grow older, however, even the tamest individuals must be handled with care, for they will usually bite on the slightest provocation, and their sharp teeth may inflict a painful wound.

Among the American squirrels probably the gray species is the best known, for their habits lead them to live in more public places than do the red or Fox squirrels. "They are quick to perceive the advantages to be had in a civilized community, while the love of stillness and the untainted air of the forest does not appear to be universal among them."

If undisturbed, they may even make their home in the hollows of the trunks or branches of shade trees. "Here they live and raise their families and lay up stores for winter, above rattling streets and humming wires, perfectly indifferent to the noise and heating air that reeks of human beings crowded together like cattle." Gray squirrels seem to fully appreciate the kindly protection of man. In the forests they and the other squirrels must be constantly watching for their enemies. The most formidable of their foes are probably the martens and weasels. These animals are not only agile, seizing their prey from a place of concealment, but they can also climb and may follow a squirrel to the topmost branches of a tree. Foxes are easily avoided by the squirrels climbing a tree, and the attacks of hawks and owls are avoided by the squirrels spiralling around a tree trunk as they rapidly climb.

There are several varieties of the Fox Squirrels which inhabit various portions of the United States. These are the northern, the western and the southern. All are large and easily adapt themselves to the requirements of the environment which they may inhabit. The home of a Fox Squirrel may be either a hole in a tree or a nest of dry leaves built in its branches. When a hole is selected it is lined with leaves, dry grass, strips of soft fibrous bark and sometimes pieces of cloth and animal hair. Fox Squirrels are not as inclined to store a supply of food for inclement and cold weather as are some of their relatives. They trust to their ability to find food from day to day and they avoid, or migrate from, regions that are covered with deep snow for a considerable time. In his instructive book, "American Animals," Mr. Witmer Stone says of the fox squirrels: "In rough weather they keep close at home in their hollow trees, choosing to go hungry rather than face the cold. In warm weather they gather wild fruit, berries and mushrooms and go into the cornfields as soon as the ears have reached the milky stage. Among the southern pines they make large nests of Spanish moss in the treetops, and here they bring the cones which they cut off, just as the red squirrels do the cones of

the white pines of the north, biting off the scales in order to get at the seeds in a similar manner. The scales scattered about the foot of the tree often betray them to the squirrel hunter."

The Western Fox Squirrel, which we illustrate, inhabits the forests of the entire area drained by the Mississippi river and its tributaries, and is the largest of the tree squirrels in the region which it inhabits. In length the fully adult Western Fox Squirrel varies from twenty-two to about twenty-eight inches, including the tail, to the end of the hairs. It varies much less in its coloration than do the northern and southern forms, "the principal variation being to dusky, annulated with rusty beneath, or with the whole ventral surface black." There is, however, a geographical variation in color, the palest individuals being found on the eastern edge of the plains. Some of these are nearly white below and much lighter above than the typical form, which inhabits the Mississippi Valley and is a decided rufus in color. It has been shown by Professor J. A. Allen that there is "a gradual transition in the color of the under parts from pale yellowish-white, through pale fulvous, deep fulvous, and ferruginous, to bright reddish-

orange, in passing from the plains and the more northern localities to the swampy regions of the Lower Red River in Louisiana. While the upper parts show a less striking change in depth of color, there is a correspondent darkening of the dorsal surface through the larger amount of black and the brighter tint of rufous."

Our picture well illustrates the reason why these pretty animals—the Western Fox Squirrel and its relatives—were given the generic name *Sciurus*. The ancient Greeks, always appreciating the beautiful, were fully aware of the attractive habits and graceful poses of these little animals. To them no name was more significant than their words *skia*, meaning shade, and *oura*, meaning tail. The compound of these two words *skiouros* was their name for squirrel, and freely translated it means, "He who is under the shadow of his tail." No more appropriate name could have been selected by Linnaeus for the group of tree squirrels, and it still is and always will be the generic title used by scientists. The name illustrates the squirrel's characteristic posture while resting, or while in an attitude of watchfulness.

SETH MINDWELL.

THE MOTHER PRAIRIE CHICKEN.

In the animal breast there is no instinct stronger than the maternal instinct, when the creature is put to the proof.

If there is an exception, it is the intuitive impulse of self-preservation—the "first law of Nature." But the mother-love of the offspring has, in innumerable instances, impelled the beast and bird to forget the instinct of mere self-preservation in defending its young. This is shown by the eagle that will risk life in defending its young from molestation.

But the same instinct is often manifested by birds that are noted for being wild, timid and wary. Take, for example, our extreme western Prairie Chicken

—those that make their habitat in the northwestern Pacific coast states.

Under almost all circumstances, the Prairie Chicken is a very wild bird and very difficult to approach except by stealth. As it is very wary and suspicious, it is hard to approach the creature without its knowledge. Instantly on discovering its natural enemy, the bird is off on the wing and out of reach.

Of course, during the "close" season these beautiful game birds are exempt from danger. This is during the breeding season, and extends up until the young broods are more than half grown.

While the mother is sitting, and in fact until the chicks are able to scurry

around, the parent bird undergoes a complete revolution, so far as fear is concerned. She loses every semblance of her native, instinctive wildness, and is as tame as the ordinary domestic hen.

One may approach to within a few feet of her rude, ground nest without the bird moving. If you get too close, the bird will very reluctantly vacate the nest. Then she will go only a few yards away, and, if the intruder withdraws a little distance, the mother will immediately return and resume her seat on the eggs or brood.

Very often I have approached the nests, slowly and cautiously, coming within a few feet without the bird offering to stir. They will sit perfectly still, but eye you most intently all the while. If you circle around the nest, the bird's gaze will never be lifted from you for an instant.

For an animal (except a dog) the Prairie Chicken, when incubating, has absolutely no fear. Orchards, meadows and stubble fields are favorite places for building their homes. The beautiful creatures expend but very little labor, patience, or skill in constructing their nests. It's a mere round hole, roughly lined with weeds and grass.

The eggs are about one-half the size of an ordinary hen's and are of a greyish-yellow hue. In number the eggs range from eight to sixteen. I have seen nests containing twenty or more. The incubating period is about the same as that of the grouse, pheasant and quail.

The plowman very frequently comes

across the bird and her nest. In most instances the pretty speckled and striped mother will not stir, even if stepped upon by the horses. When the nest is discovered in time, the kind hearted farmer invariably plows a furrow around, leaving bird and nest unmolested.

I knew of one farmer who, in cultivation of a small piece of ground, came across sixteen nests. Although he used extreme care and vigilance, he unhappily destroyed several nests by plowing eggs and broods under. In no instance would the mother-bird move until the ruthless plowshare had devastated her home. One of the birds was trampled upon by the horses and crushed to death, greatly to the farmer's regret.

The Prairie Chicken makes a kind, watchful mother. She is always on the alert for danger, and sounds a signal warning to the brood that is instantly heeded. Like a flash, the nimble little creatures scud away to places of shelter. When her chicks have hidden, the old bird will take to wing, but will not fly far away.

After the danger is past, the mother will return and by her calls speedily collect the members of her brood. As a usual thing, the young chickens are not entirely deserted until nearly grown.

Unless a nest has been rudely disturbed, the mother-bird will not permanently abandon it. If the eggs are hatched, she will return and tenderly care for the brood.

J. MAYNE BALTIMORE.

SOMETHING ABOUT BUTTERFLIES.

Butterfly is a popular term for a few of the higher families of scaly winged insects. They differ from moths in having their wings erect when not in use, and almost invariably fly by day and in the hot sunshine. In transformation they seldom spin a cocoon, for the hinder end of the chrysalis is provided with little hooks by which a firm hold is had of a button of silk, spun beforehand, to cling to.

Moths generally fly by night, expand their wings fully, or even incline them downward when at rest. Moths always pass their chrysalis state in a cocoon or in a cell beneath the ground, and have no hooks at the tip of their chrysalis. Together with other scaly winged (*Lepidoptera*) insects, the butterfly undergoes peculiar and, to outward appearances, very sudden transformations during its growth.

Born as an egg, it emerges from it as a wormlike animal called a caterpillar, which feeds voraciously upon the plant upon which its maternal instinct has taught the butterfly to lay her egg. It casts its skin several times in its growth, and finally changing its integuments again, comes out a pupa or chrysalis in which the creature appears, as if in swaddling-clothes. All its appendages are neatly encased upon its breast, and itself helpless and almost completely motionless to ordinary view. As different as possible from the aerial creature with variagated tremulous wings one may see shortly afterwards sipping honey from an open flower or dancing merrily in the sunshine.

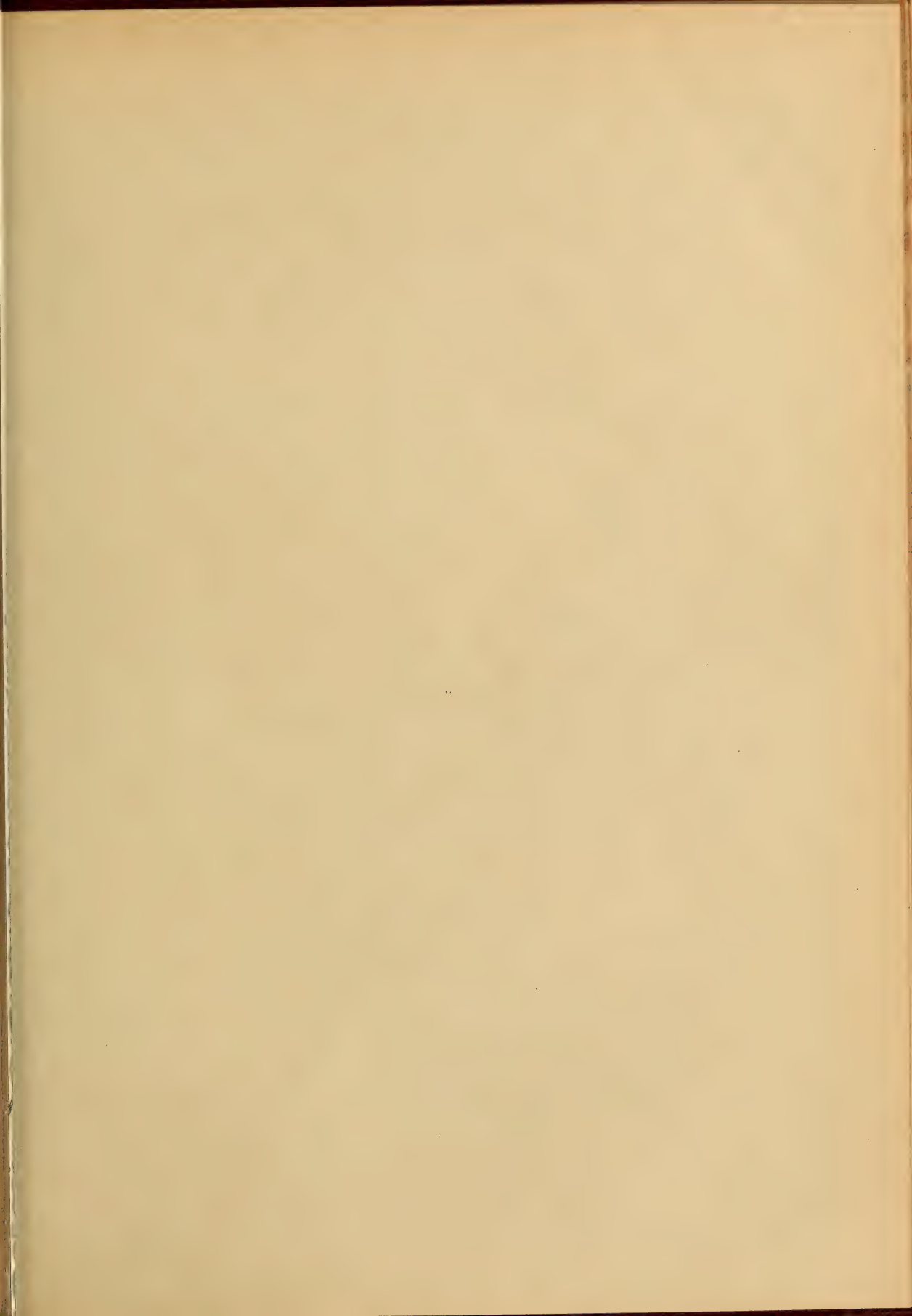
The butterfly deposits her egg on both the upper and under side of leaves and on stems. They are laid sometimes singly, sometimes in masses, or in clusters of two or more. They look very uninteresting, but under the microscope one might look far before discovering ob-

jects more graceful in form or more delicate in marking. Their vaulted summits might give useful hints to the architect. The extreme summit of each tiny egg is always covered by a little rosette of cells of the most exquisite delicacy. Indeed, so delicate are they that they often require the highest powers of the microscope to discern, but arranged in such definite patterns that in looking at them we seem to be peering through the circular rose-window of a miniature gothic cathedral. The cells which form the interior of the rosette are the points at which the microscopic pores or canals lead into the interior of the egg and through which it is fertilized. Eggs vary much in height and are usually ribbed vertically, the ribs varying in one species from eight, thirty, or forty in number. In shape they vary and are either barrel shaped, globular, sugar loafed, flask or acorn shaped, fusiform or spindle-shape. The most common is the barrel shape.

The caterpillar of the swallow-tailed butterfly (*Papilionidae*) is provided with a scent organ, situated on the first segment, behind the head. When extended, the organ is in the shape of a Y, but when not required for defense it is entirely retracted within the body. This organ is unquestionably a weapon of defense against foes, for the stench it emits is simply insufferable. In other Butterflies the stench organs are generally found upon the under side of the body, between lower top and the front legs. In this place it is never developed as a Y shaped organ, but is rounded as a conical or hemispherical bladder of greater or less size.

The caterpillars, in growth from egg to maturity, naturally changes the character of its coating, after every month or changing of its skin.

Some caterpillars have enormously de-





veloped silk organs, especially those of some of the moths. They consist of long, simple tubes which open by a spinaret at the under lip. The silk which the caterpillar spins is used for various purposes, in construction of webs, tents and cases, and in the rolling and fastening of chrysalis.

The change undergone by the Butterfly in passing from caterpillar state to chrysalis has always excited much interest. Most species suspend themselves by the posterior end of the body. A caterpillar of this kind spins a loose button of silk in some suitable place and firmly attaches itself by the hooks of the hinder legs and appendages and hangs by the tail. It next curves the front part of the body upward on the vertical side, and after a time, when the front part of the body becomes greatly swollen by the descent of the body fluids, a rent is produced in the back of the caterpillar and the chrysalis gradually protrudes; after remaining in chrysalis state for a greater or less time, the fully developed insect emerges.

Moths do not suspend a chrysalis, but spin cocoons, or, for transformation, enter several inches in the ground.

The Ruddy Silver-spot (*Argynnis alcestitis*) belongs to a class of spotted butterflies which can be easily recognized by the silver spots on the underside of the wings. Unfortunately our illustration only shows the upper surface which is spotted only with black. This butterfly flies from toward the last of June to the first of September. It is a native of the Western States from Ohio to Montana. Its caterpillar feeds on violets.

The Crescent-spots form a group of butterflies which finds its greatest development in Central and South America. There are a large number of species, many of which are quite highly colored. Those found in the United States and Canada are usually quite plain, the predominating colors being shades of brown or yellow, with more or less of black. The *Phyciodes nycteis* of our illustration is quite common throughout the Northern United States from the Atlantic Coast to the Rocky Mountains.

There is a lovely class of butterflies, chiefly of a yellowish color, which gather by hundreds on wet roadsides or flit from flower to flower in field or garden. They are called Sulphurs. They are yellow or orange in color, and the wings are margined with black. James Whitcomb Riley has written of these butterflies in the following verse:

Above the arching jimson-weeds flare twos
And twos of sallow-yellow butterflies,
Like blooms of lorn primroses blowing
When autumn winds arise.

The Sulphurs feed upon clover and, to some extent, on other leguminose plants. *Colias eurytheme* of our illustration is a very variable and widely distributed species, its range extending from the Atlantic to the Pacific and from Canada to the southern border of the United States. *Meganostoma caesonia*, which is also pictured, is much more common in the southern than in the northern United States. It is frequently called the Dog-face Butterfly on account of the fact that the outline of the yellow on the fore wings seems to suggest the head of a dog, the black spot serving as an eye.

Probably no butterfly is better known than is the Monarch (*Anosia plexippus*). This butterfly easily adapts itself to a change of environment, and quite recently it has been carried across the Pacific, and has found lodgment in Australia, where it has rapidly multiplied. It seems destined to become a cosmopolitan species. Its larvæ feed upon the common milweeds (*Asclepias*), and it is often called the Milkweed Butterfly.

The Mourning or Purple Cloak, as it is called in America, or the Camberwell Beauty in England, is technically known as *Vanessa antiopa*. It is one of the most beautiful of our larger butterflies, and it is so common that it needs no description. The Purple Cloak is often to be found in midwinter sticking to rafters and barns and crevices of walls and stone heaps, huddled together in great numbers. It comes out of its winter quarters early in the spring, before snow has entirely disappeared, and is seen generally in warm and sheltered spots. The poet Wilson refers to this butterfly:

When first the lone butterfly flits on its wings.

The caterpillar lives, in great numbers,

on poplars and elms, and the first brood come early in June. In appearance it is black, minutely dotted with white, with rows of eight brick red spots on the top of its back. The head is black with projecting points and each segment has six or seven spines. With this thorny armature it has the appearance of being very formidable, although it is one of our most harmless caterpillars. The caterpillar is dark brown with large tawny spots around the pointed tubercles on its back. It remains twelve days in the chrysalis state. The caterpillar feeds on the leaves of every kind of violets.

About the last of May or the beginning of June a small but pretty white butterfly may be seen flying over cabbage, radish and turnip beds. This may be the *Pieris protodice* of our illustration or its interesting relative, *Pieris rapae*. Both do a great deal of damage. They lay their eggs on the under side of a leaf, and while the number is not great there are sufficient to cause great de-

struction when the caterpillars are hatched. The *Pieris rapae* or small white cabbage butterfly is interesting historically, since it is not a native of our country, but was brought to us, probably as a fertile female stowaway in a ship load of vegetables from Europe about 1860. In 1881 it had spread over the eastern half of the continent, and it is now found from the Atlantic to the Pacific.

Debis portlandia, often called the Pearly Eye, has an extensive range, covering the United States from the Atlantic Ocean to the Rocky Mountains. Its larvae feed upon grasses. This pretty butterfly is one of two species which are the sole representatives in this country of a very large genus.

Pyrameis huntera, or Hunter's Butterfly, is quite widely distributed over the United States. Its larvae feed upon cudweed (*Gnaphalium*) and everlasting (*Antennaria*).

ISABEL M. JOHNSTON.

THE CHILD AND THE BUTTERFLY.

"Oh, butterfly, how do you, pray,
Your wings so prettily array?
Where do you find the paints from which
To mix your colors, warm and rich?"

The butterfly, in answer, said:
"The roses lend me pink and red,
The violets their deepest blue,
And every flower its chosen hue.

"My palette is a rose-leaf fair,
My brush is formed of maiden-hair,
And dewdrops shining in the grass
Serve nicely for my looking-glass!"

—NIXON WATERMAN.

The beautiful is as useful as the useful.—*Victor Hugo.*

BIRDS AND NATURE

CONTENTS

	Page
A LAMENT FOR THE SUMMER (Adelaide A. Procter) [Poem]	97
THE MOUNTAIN BLUEBIRD [Illustration]	98
MY FARMER FRIENDS—Part I (Warren Higgins)	101
THE CALIFORNIA LEMON (Louise Jamison)	104
THE GREATER YELLOW-LEGS [Illustration]	107
EARLY AUTUMN DAYS (George Leslie Hutchinson) [Poem]	108
THE EVENING GROSBEEK [Illustration]	110
CURIOUS CAVES (Belle Paxson Drury)	113
THE COYOTE OR PRAIRIE WOLF (Seth Mindwell) [Illustration]	119
WATER DOGS (Harriet Williams Myers)	120
THE OLD STONE PILE (Core A. Matson Dolson) [Poem]	121
INTERESTING FACTS REGARDING BUTTERFLIES [Illustration]	122
THE TRUE STORY OF A BROWN THRUSH (Austin Arnold McCausland)	126
NOON (Rae Mortimer Seymour) [Poem]	127
A MIDNIGHT EPISODE WITH VANESSA ANTIOPA (Ellen Robertson Miller)	128
THE KINGBIRD [Illustration]	131
THE BLUEBIRD'S HAPPY HOME (Florence Bennett Scott)	133
THE WOOD DUCK (Gerard Alan Abbott) [Illustration]	134
THE GREAT BLUE HERON (J. Vallance Brown) [Poem]	137
QUEEN NEPHILA WILDERI (Katharine Theodocia Cornish)	138
THE AMERICAN OSPREY OR FISH HAWK [Illustration]	140
OCTOBER (Eliza Woodworth) [Poem]	144

EDITED BY WILLIAM KERR HIGLEY

ILLUSTRATED BY COLOR PHOTOGRAPHY



\$1.50 a Year. 15 Cts. a Copy.

A. W. MUMFORD, Publisher

375 Wabash Ave., Chicago, Ill.

BIRDS AND NATURE

Monthly, except July and August

TERMS AND CONDITIONS OF PUBLICATION

PRICE. Subscription price is one dollar and fifty cents a year, payable in advance; with 50 assorted pictures, \$2.00; single copy, 15 cents.

POSTAGE IS PREPAID by the publisher for all subscriptions in the United States, Guam, Porto Rico, Tutuila (Samoa), Canada and Mexico. For all other countries in the Postal Union add 30 cents postage.

CHANGE OF ADDRESS. When a change of address is ordered, both the new and the old address must be given. Postmasters are not allowed to forward second-class matter until postage is sent to prepay charges. It costs two cents per copy to forward this magazine. Subscribers who do not observe this rule should not ask us to send duplicate copies.

DISCONTINUANCES. If a subscriber wishes his magazine discontinued at the expiration of his subscription, notice to that effect should be sent, otherwise it is assumed that a continuance of the subscription is desired.

HOW TO REMIT. Remittances should be sent by check, draft, express order, or money order, payable to order of A. W. Mumford. Cash should be sent in registered letter.

AGENTS. We want an energetic, courteous agent in every town and county. Write for terms and territory.

RECEIPTS. Remittances are acknowledged by change of label on wrapper, indicating date to which subscription is paid.

MAGAZINES, back numbers, from 1897, 25 cents a copy, \$2.00 a year; the 84 back numbers for \$12.60.

BOUND VOLUMES, I to XVI, each 8vo, 244 pages, from 40 to 60 colored pictures, 8x10 in., cloth, \$1.50. Double volumes, half morocco, \$3.00. Sixteen single volumes, cloth, \$18.00. Eight double volumes, half morocco, \$18.00.

Exchange price for bound volumes when magazines are returned: Single volumes, cloth, \$1.00. Combined volumes, half morocco, \$1.50.

COLORED PICTURES, assorted as desired, 2 cents each; \$1.80 per 100; \$15.00 per 1,000. The 648 pictures for \$6.48.

PREMIUMS. Either of the following colored pictures sent free with subscriptions: (1) *Song of the Lark*, 18x21, or (2) *Gladstone*, 18x24, or (3) *The Golden Pheasant*, 18x24, or (4) ten colored pictures from *Birds and Nature*, (5) *Three Forest Tree Pictures*, 9x12, or (6) *Set of 12 Industrial Pictures*.

OTHER PUBLICATIONS.

Little Folks.....\$1.00
School Bulletin (Monthly).....1.00
American Primary Teacher (Monthly).....1.00
N. E. Journal of Education (Weekly).....2.50
Educational Review (Monthly).....3.00

Ten per cent discount on any or all of these when ordered in combination with *Birds and Nature*. Sent to one or several addresses.

All letters should be addressed to **A. W. MUMFORD, Publisher, 378 Wabash Avenue, Chicago**

\$4.10 for \$2.00

A COMBINATION
OFFER THAT
MEANS SOMETHING

BIRDS AND NATURE (one year).....\$1.50
BIRDS OF SONG AND STORY (Grinnell).....1.00
GAME OF BIRDS......35
GOLDEN PHEASANT (Colored Picture)......25
LITERATURE GAME......25
GAME OF INDUSTRIES......25
TWENTY-FIVE PICTURES (From Birds and Nature)......50

ALL FOR ONLY
\$2.00

Postage or express 25 cents

The total amount of value.....\$4.10

BIRDS AND NATURE——Monthly; 48 pages, 8x10 inches; per year, \$1.50. A magazine devoted to nature, and illustrated by color photography. It is the only periodical in the world which publishes pictures of birds, animals, insects, flowers, plants, etc., in natural colors. Eight full page plates each month.

"Certainly no periodical, and probably no book, on birds ever found anything like such favor with the public as *BIRDS AND NATURE*."—*Evening Post, New York*

BIRDS OF SONG AND STORY——A bird book for Audubon societies, 16 color plates.

GAME OF BIRDS——Illustrations of popular birds, in colors true to nature, on 52 finely enameled cards 2½x3½ inches. Enclosed in case with full directions for playing. A beautiful and fascinating game.

GOLDEN PHEASANT——A beautiful Picture for framing. Printed in natural colors on fine paper 18x24 inches.

LITERATURE GAME——500 Questions and Answers in English Literature. 100 cards, 2½x3 inches. Interesting and instructive.

GAME OF INDUSTRIES——Educational—400 Questions and Answers on the great industries of our country. 100 cards, 2½x3 inches.

REMEMBER——A year's subscription to *BIRDS AND NATURE* and "Birds of Song and Story" alone amount to \$2.50. If you now take *BIRDS AND NATURE* your subscription will be advanced one year.

A sample of *Birds and Nature* for a dime and two pennies—12 cents in stamps. Send for Catalogue.

A. W. MUMFORD, Publisher, 378 Wabash Avenue, Chicago.



A. W. Mumford, Chicago

BUTTERNUT

BIRDS AND NATURE.

ILLUSTRATED BY COLOR PHOTOGRAPHY.

VOL. XVI.

OCTOBER, 1904.

No. 3

A LAMENT FOR THE SUMMER.

Moan, O ye Autumn Winds!
Summer has fled,
The flowers have closed their tender leaves and died;
The lily's gracious head,
All low must lie,
Because the gentle Summer now is dead.

Grieve, O ye Autumn Winds!
Summer lies low;
The rose's trembling leaves will soon be shed,
For she that loved her so,
Alas! is dead,
And one by one her loving children go.

Wail, O ye Autumn Winds!
She lives no more
The gentle Summer, with her balmy breath,
Still sweeter than before
When nearer death,
And brighter every day the smile she wore!

Mourn, mourn, O Autumn Winds!
Lament and mourn;
How many half-blown buds must close and die,
Hopes with the Summer born
All faded lie,
And leave us desolate and Earth forlorn!

—ADELAIDE A. PROCTOR.

THE MOUNTAIN BLUEBIRD.

(*Sialia arctica*.)

The exquisite coloring of the Arctic Bluebird makes it seem the gentlest, most beautiful of all the lovely bluebirds.—Florence Merriam Bailey.

No bird can be more attractive than this gentle, sweet tempered and shy Bluebird of the mountains. Loving the light, bracing air and the quiet forests of the mountain side, it is rarely seen upon the lowlands, but is abundant from the plains up to timber-line. In some localities it has been known to go above the point at which timber growth ceases, and it has been observed at an elevation of 13,000 feet.

The Mountain Bluebird very closely resembles its eastern relative, the well known bluebird, *Sialia sialis*. Its colors, however, are softer and more delicate, and it is not so truly arboreal as is the eastern species. It seeks its food, to a great extent, in the open places while hovering but a short distance above the ground. It possesses a shy and retiring disposition, yet it will accept the hospitality of the miner or ranchman, and builds its home in the nesting places that he has provided. The Bluebirds will also build their nests about old buildings; in suitable places in the vicinity of mines; in hollow trees; in the deserted holes of woodpeckers, and in openings and crev-

ices in the rocky formations at higher elevations.

The Mountain Bluebirds feed upon grasshoppers, beetles and other insects, and also upon the seeds of various plants, and cedar berries. A large part of their food is picked up from the ground, and not infrequently it is obtained by scratching among the fallen leaves.

The song of the Mountain Bluebird is like its own nature, simple and sweet. Dr. Ridgway says: "The common note of this Bluebird would, from its character, be at once recognized as that of a bluebird. Its autumnal note, however, lacks entirely the peculiar plaintiveness so characteristic of that of our eastern species, and is much more feeble, consisting of a single weak *chirp*. The *Sialia arctica* was also never heard to give utterance to anything resembling the lovely spring warbling of the *Sialia sialis*."

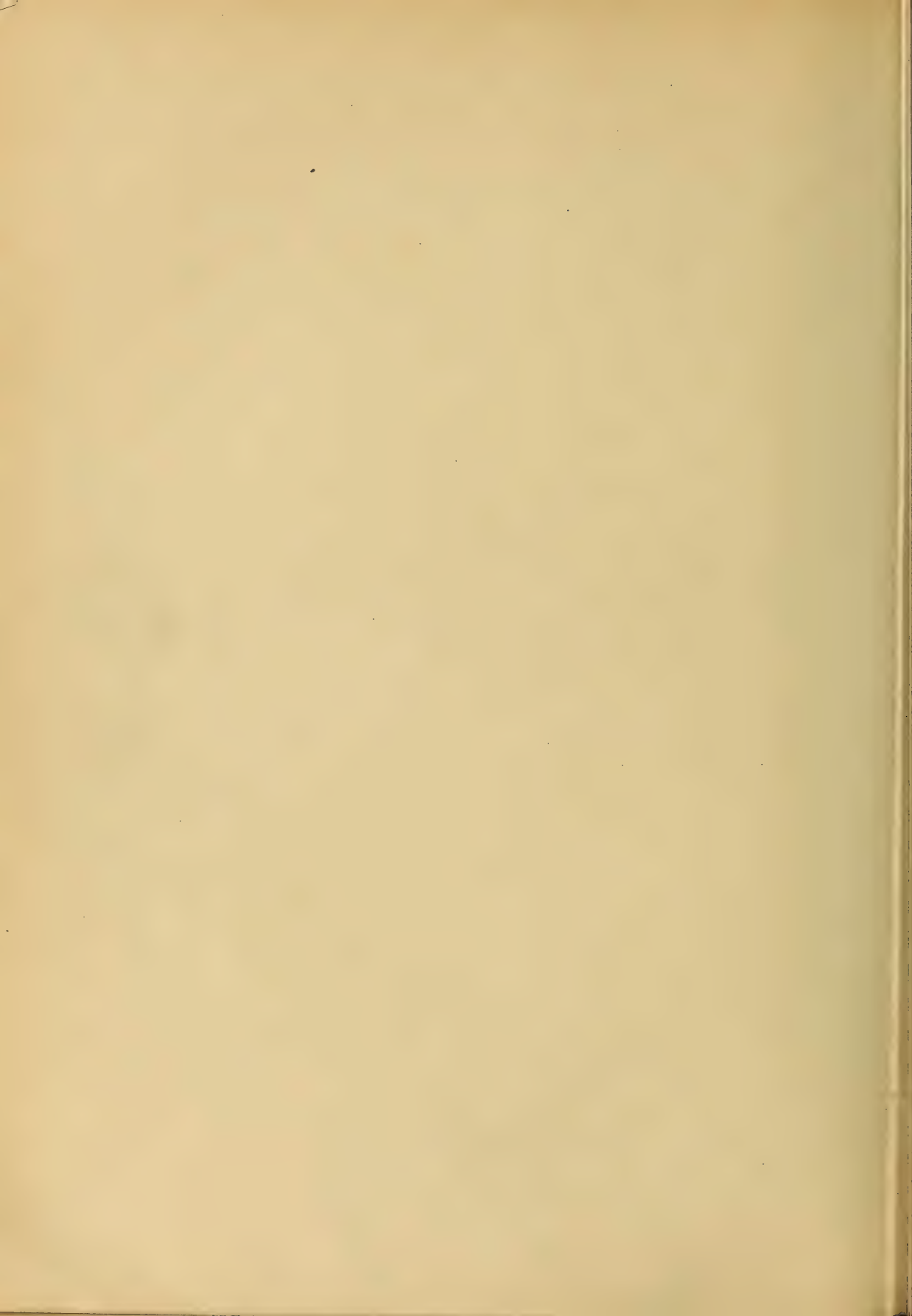
Of this beautiful bird, Mrs. Wheelock has written: "No words can describe his brilliancy in the breeding season, as he flies through the sunny clearings of the higher Sierra Nevada, or sits like a bright blue flower against the dark green of the pines."

Lo, the last clusters! pluck them, every one,
And let us sup with summer, ere the gleam
Of autumn sets the year's pent sorrow free,
And the woods wail like echoes from the sea.

—ROSETTI.



MOUNTAIN BLUEBIRD.
(*Sialia arctica*).
 $\frac{3}{4}$ Life-size.



MY FARMER FRIENDS.

(IN NORTHERN INDIANA.)

PART I.

Until a few years ago, most people thought that all song-birds were pretty and could sing sweetly. That is true of most birds, but recent investigations have disclosed some startling facts. The part that our common birds play in the economy of nature is of great importance. When it comes to a bird destroying several thousand noxious insects in a single season, even the most obtuse will acknowledge that they are of some value aside from the generally accepted idea.

To begin with, there is the robin, probably the best known of our native birds. He builds his nest in the apple or cherry tree or, may be, right under the eaves of the porch. Through the days of courtship and while the patient mother broods, they do not consume so much food, but when four little robins make an appearance then the demand for food is greatly increased. From early morning till late in the evening these voracious youngsters constantly clamor for food. Both the parent birds work, and work hard too. One robin has been known to destroy as many as two hundred cut worms in a single morning. When the amount of damage these worms do is taken into consideration, the value of their services becomes plain. It is true that later on they consume a little small fruit and some cherries. But just as soon as wild fruits ripen, Mr. Robin and family forsake the tame for the wild. Recent investigations by the Department of Agriculture show that the robin eats ten times as much wild as tame fruit; noxious insects form about one-third of its diet. The wild fruits that they consume are not those adopted by man to any extent. So on the whole they are highly beneficial from a mere mercenary standpoint.

Closely connected with the robin in song and story is the bluebird. Lowell aptly describes him in spring as "Shifting his light load of song, From post to post along the cheerless fence." He is a bright spot in the dull landscape of March and when he finds a bird-house,

an old wood-pecker's nest or even a knot-hole you may be sure of having some sweet music. The song is so melodious, —as tremulous as if it were not a part of early spring weather. Even the most careless will be struck with the beauty of his cobalt blue back and cinnamon breast, And he plays an important part in the economy of nature. The characteristics of the worm and insect-eating family are plainly shown in the long slender bill. About three-fourths of its food consists of insects and allied forms. Of these, the majority are harmful to the farmer. In one orchard infested with canker-worms it was found that the worms formed about sixty per cent of its diet. Some beneficial insects such as predaceous beetles were consumed but by far the most were detrimental. The Department earnestly recommends its propagation. These two birds frequent the house and door-yard in city as well as in country.

Now we turn to the meadowlark. It is distinctly a bird of the fields. Born on the ground among the blossoming clover or timothy it spends its whole life in the free air of the fields. Unfortunately it is too often seen in the markets, for its tender flesh is too toothsome a tidbit for people to leave alone. As the old lady remarked when some one was speaking of the song of our meadowlarks, "yes, and they are such good eating."

In spring when fields are bare and dead, and snow and ice still linger along the fences comes the meadowlark. Sweeter than the "Pipes of Pan" rises a voice from the dead grass and a sudden whirr of wings, as a dark gray bird with white quill feathers rises upwards to the sound of a prolonged melodious song. I think there are few finer sounds than the music from the voices of a dozen meadowlarks as they soar upwards. But I believe we were to see in what way they were beneficial from a financial standpoint. The Department of Agriculture

says: "In two or three specimens examined, animal food, practically all insects, constituted seventy-three per cent and vegetable, twenty-seven per cent. The insects were ground species, such as beetles, bugs, grass-hoppers and caterpillars, some flies, wasps and spiders. They eat great numbers of crickets, grass-hoppers, and many beetles. They may become very valuable in combating new enemies such as the clover root borer and clover leaf weevil. The vegetable food is grain, weed, and other seeds. Most of the grain is waste grain." In conclusion it says: "It will thus be seen that the meadowlark is almost entirely beneficial. Care should be taken to protect it from the gunner who wants something to practice on and also from destruction in any form. The mower in particular, in fields of red clover when first cut, destroys many nests, eggs and young."

Another very important early arrival is the crow blackbird and a little later, the redwing. You know Lowell says:

Fust come the blackbirds clatterin' in all trees,
And settlin' things in windy congresses;
Queer politicians though, for I'll be skinned,
If all of 'em don't head against the wind.

But whether he be a queer politician or not, he is a good friend and one that I always rejoice to see. He is so vigorous, so full of life. And the sun makes some gorgeous coloring when it strikes his feathers on a bright sunny morning. His cousin, the redwing, is not so brilliant in coloring but wears red epaulets and his wife, salmon, on her wings. His sweet "oak-a-lee, oak-a-lee" is as the music wafted from the meadows when the buttercups and marsh marigolds are in bloom. Though the crow blackbird has been accused of stealing some grain and the redwing a little, yet on the whole they are beneficial. The keel-tails destroy great numbers of worms and bugs in the spring when oats and corn are put out. For that matter, the cowbird does also. Though the latter is the black sheep of the family, I would feel lonesome if he and his brown mates were not tramping about the fields where I plough in the spring. They follow cattle and sheep, picking up insects that they may disturb. I have heard some slurs cast

on the conduct of the crow blackbird but I have never seen him do anything out of the way. The characteristics of the cowbird are too well known to discuss here. On the whole, these birds are beneficial, a great help in destroying noxious insects and in keeping the "balance of life."

No better friends of mine can be found than the orioles. They may be easily recognized by the brilliant coloring. Black and orange mark the Baltimore male, his mate having the black obscured by olive. The orchard oriole is chestnut and black, his mate being olive green and yellow. These two birds are very conspicuous by their brilliant colorings and loud clear voices. They linger in the south until the air is warm and spring is here in earnest. Then they come with all their bright regalia and merry song. Both birds frequent the yard and orchard, especially the orchard oriole. Few birds are as beneficial. Their food consists of insects and worms that are a pest to the farmer and especially valuable is the orchard oriole for he spends his whole life where the name would indicate. They destroy cankerworms, green worms, hairless caterpillars, beetles, flies, cabbage-worms and plant-lice. They are very destructive to insects that feed on foliage of trees, berries, bushes and grape-vines. Among the latter, they use their sharp bills to destroy the cocoons wrapped within the leaves. They deserve the most careful attention of farmers.

Our cuckoos bear a bad reputation from the notorious habits of the English cuckoo. It is seldom that our native cuckoos are guilty of such practices, yet they do construct a slovenly nest that a person would think might let the eggs or young birds tumble out. Every one knows the "raincrow" by voice if not by sight. They frequent thick woods or the shrubbery about the house. Last summer there were two nests in our yard. It is somewhat difficult to distinguish the black from the yellow-billed. The latter has white spots on the quill feathers, thumb marks they are sometimes called, while the former has red rings about the eyes. Probably no bird is more beneficial than the cuckoo. They are particularly fond of canker-worms and those hairy caterpillars that other birds do not eat.

They are also fond of the insects that destroy the leaves on black walnut trees.

Taken all together, they perform valuable service to the fruit grower.

Both barn and chimney swallow merit careful attention. Surely every one knows them. Who has not watched the graceful flight of the barn swallow on a fine May evening as they circle about, now high, now low, turning with the greatest ease either to the right or left, sometimes almost stopping, then darting swiftly ahead, the very embodiment of grace in their movements. They formerly nested more in our barn than they do now since these miserable English sparrows have become so numerous. Up in the comb of the barn is the favorite nesting place. But the chimney swallow will have none of this. He goes down inside the chimney and glues a nest to the side of it. It nearly always falls down but not until the young birds are able to stand a good tumble. In the nearest town (Logansport, Indiana) are large chimneys belonging to factories and mills. Along in June, the chimney swallows can be numbered by the thousand as they circle about before going to roost. Both birds live on insects gathered as they fly about. The barn swallow is the more valuable besides being a much handsomer bird.

Now we come to the house wren. A little brown sprite with long bill and a very long tail. Some people call them "dicky birds" though I have never been able to see from whence the name comes. The snug warm nest with from eight to ten white eggs are familiar to all. It prefers the buildings about the house for a nesting-site and will sometimes come to the porch if allowed. It is one of our best friends. I quote from the "Government Report." Of fifty-two specimens examined ninety-two per cent of their food was insects and their allies and only two per cent was vegetable. It pays to put up boxes and other sites for these and other friendly birds. They are then encouraged to build about homes in gardens and orchards where their usefulness is greatly increased.

What can I say new of the catbird? Each bird seems to have new eccentricities. Every one knows him and feels more or less interested in the slate-

colored bird that says "mew, mew," so distinctly. Probably some member of the family will find a shallow loosely constructed nest in the shrubbery containing four green eggs that belong to this same catbird. Though he eats some fruit yet the number of insects he destroys make the good far outweigh the harm. He frequents thickets where it is difficult for man to penetrate and thus performs a valuable work.

It is useless to describe the brown thrush to any one who has spent even a few days in the country. He is too well known both in literature and in the field to merit description. Coming while the weather is still cold he begins with a merry song that lasts until the season is far advanced. His song is one of the most hilarious of all our birds. In early May they always wake me in the morning by singing. He is a good friend to the farmer for his diet is made up of insects detrimental to agriculture.

Of the true family of thrushes but one is common about here: the wood thrush. They are very common in the woods but do not often come about dwellings. Probably they are the finest singers though the rose-breasted grosbeak is nearly an equal. They nest in the woods and fill it with the sweetest music. I know of nothing that will compare with several of these birds singing at sunset when the air is soft and the blue sky is an ever changing panorama of colors. Then up from the woods floats a melody that is unsurpassed for sweetness and tenderness. Like most others they are very destructive to insects.

Another very interesting family is that of the vireo. Of the six that frequent this state the two most common are the red-eyed and warbling, in this locality. Both come in April to liven the orchard and woods. They work industriously and faithfully at clearing trees and shrubs of various pests. Of all persistent singers the red-eyed stands at the head. It never is so hot that he can not be heard repeating the short but never ceasing song. It is somewhat tiresome at times yet it is pleasant to hear when almost all others have paused to rest. The warbling vireo sings a breezy song that has in it all the elements of vigorous life.

WARREN HIGGINS.

THE CALIFORNIA LEMON.

The time does not seem far distant when there will be produced within the limits of these United States all the necessities and luxuries of civilized life, and it is safe to say that California will play no small part in the great work.

Indeed this splendid state is constantly giving some fresh evidence of her magnificent resources. The recent marvelous growth of her lemon industry, seems therefore, not a matter for surprise, but rather a very natural achievement. She exported no less than six hundred thousand boxes of lemons during the past year. That, notwithstanding the fact that more than half of the trees already planted in the great lemon regions have not yet reached the bearing age. Further, there is space for millions more. Certainly her productive capacity has its possibilities. No wonder she is rapidly monopolizing the home market, hitherto supplied by Sicily and has her eye upon foreign trade as well.

By experts it is claimed that certain portions of southern California possess in a degree unequaled on any known portion of the globe, the peculiar conditions necessary to lemon growth. For, to a generous soil, an equable temperature and freedom from frost, she adds that unique advantage, the almost perpetual sunshine of a temperate, not a tropical, climate. But, as this sunshine is at the expense of rain, which in this region falls very rarely, some provision had to be made for securing that great necessity to the lemon's well being—water.

The need was met by the construction of vast reservoirs far back in the mountains, where rain was a more common occurrence, and where it could be gathered and hoarded for future use. The water, thus acquired, is conducted by means of pipes to the various ranches, a

meter at the entrance to each measuring and recording the amount used. The pipes are opened several times a year, and the water allowed to flow in little rivulets between the rows of trees.

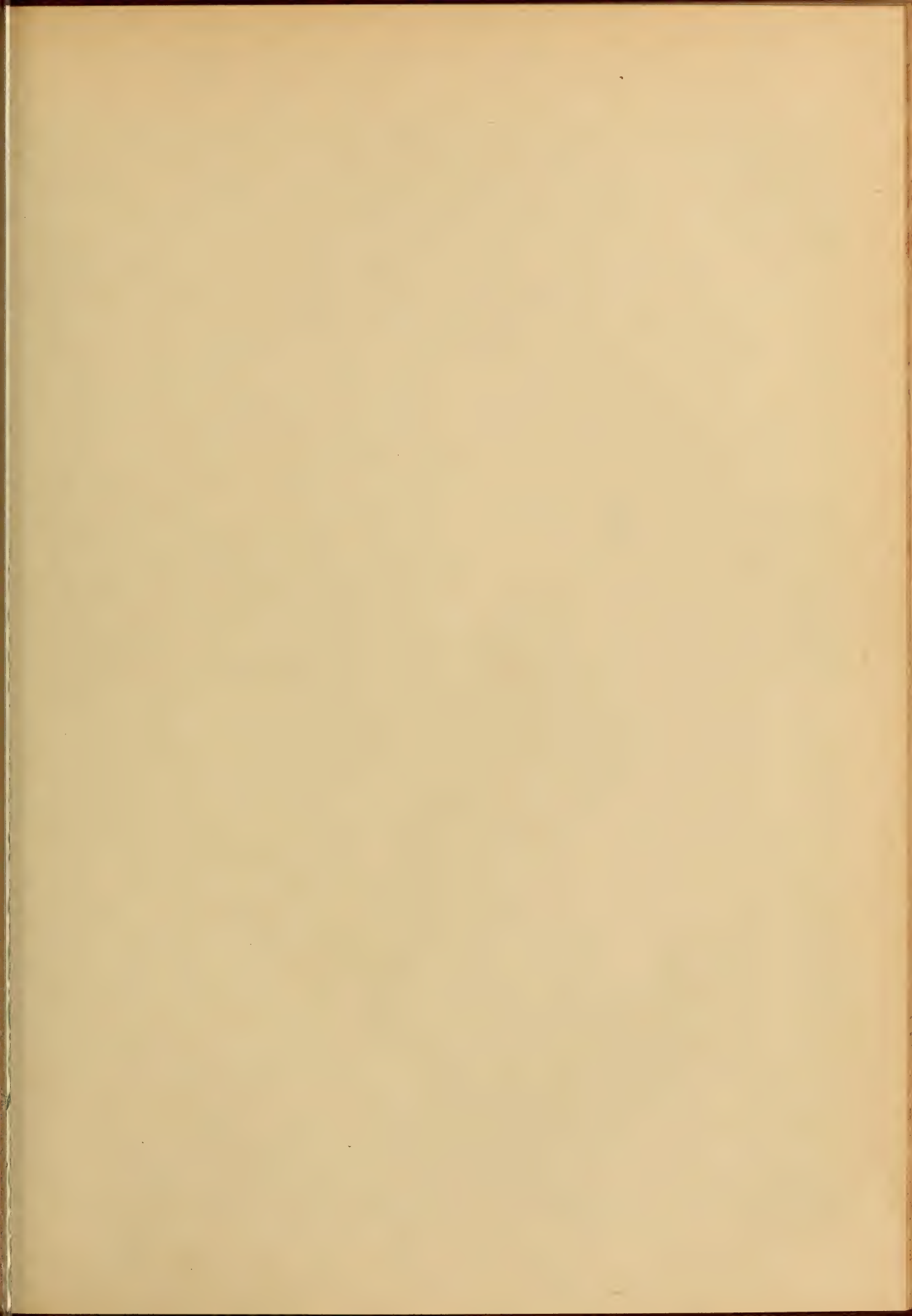
The harvest in this San Diego district is continuous. The blossom, and green and ripe fruit, may be seen, side by side, on the same tree.

The pickers are mainly men. Their wages range from \$1.25 to \$2.00 a day, while the Sicilian receives only from thirty to forty cents for the same work. Each picker wears a bag strapped to his chest, and carries in one hand a clipping knife, in the other, a steel ring two and five-sixteenths inches in diameter. This ring is passed over the lemons before picking and such as fit it are taken from the tree, whether they are ripe or green, for they belong in the category "medium," the size in greatest demand by those who can afford to be fastidious. Of course all ripe fruit is picked, without reference to size but the green, if small, is left on the tree to increase in size.

Ripe lemons are ready for immediate market, but the green ones are piled away in boxes for curing or ripening. This usually requires from six to eight weeks. After being removed from the trees, the lemons are taken to a warehouse, where they are run through a washing wheel and packed ready for shipment. This washing wheel is about five feet in diameter, with brushes five or six inches long, arranged on the outer rim. These brushes pass down into a trough of water as the wheel revolves, and in this trough lemons are fed. The brushes remove the dirt and slight imperfections.

After boxes are placed in cars long strips of wood hold them in place during their long journey across the American continent.

LOUISE JAMISON.





THE GREATER YELLOW-LEGS.

(*Totanus melanoleucus*.)

No bird bears a more appropriate name than does this wader with its long yellow legs. In many localities Greater Yellow-shanks is the name by which it is commonly known, and who that is acquainted with it does not recognize that the name Tell-tale is also very characteristic of the bird's habits. When flushed, the Yellow-legs excitedly rise from their feeding grounds uttering loud whistling notes which cannot well be expressed in syllables, but are easily imitated by the hunter. Other water and shore birds have learned that this piercing whistle is indicative of danger and they, too, take flight. Mr. Wilson has said: "Nature seems to have intended this bird as a kind of spy, or sentinel, for the safety of the rest; and so well acquainted are they with the watchful vigilance of this species, that while it continues silent among them, the ducks feed in the bogs and marshes without the least suspicion. The great object of the gunner is to escape the penetrating glance of this guardian, which it is sometimes extremely difficult to effect. On the first whistle of the Tell-tale, if beyond gunshot, the gunner abandons his design." Not only is this whistle of the Tell-tale loud and shrill, but also its very tone is that of alarm. Its usual whistling call notes are so penetrating that, even when the bird is flying at a great height where it is almost invisible to the eye, the sound reaches the earth and can be distinctly heard. It is inquisitive and seldom fails to respond to a good imitation of their call by the hunter. In fact, it will check its onward flight and turning back fly over the path whence it came, in its desire to locate the source of the new call.

Mr. Frank M. Chapman has beautifully described the habits of the Greater Yellow-legs when responding to an imitated call. He was half reclining in his blind, and saw "in fancy the staring decoys, pointing like weathercocks with the

wind." He says: "Few birds are flying; lulled by the *lap, lap* of the water, I have almost fallen asleep, when far up in the gray sky comes a soft, flutelike whistle, *when, when - when - when - when - when - when - when*. I respond quickly, and, lying on my back, look eagerly upward. Not a bird can be seen, but the questioning call grows stronger and is repeated more frequently. Finally I distinguish five or six black points sailing in narrow circles so high that I can scarcely believe they are the birds I hear. But no bar or shoal breaks the sound waves. The birds, grown larger and on widening circles, sweep earthward. The soft whistle has a plaintive tone; their long bills turn inquiringly from side to side. The stolid decoys give no response, they repel rather than encourage, but the whistling continues, and with murmured notes of interrogation the deluded birds wheel over them, to find too late that they have blundered."

None of the waders are more graceful than the Greater Yellow-legs. They frequent watery bogs and the muddy margins of streams. There they search for their food of insect larvae, small crustaceans and fish, worms and small mollusks, frequently wading in water deep enough to reach more than half way up to their bodies. In flying their necks and legs are extended to their full length. Their flight is swift and frequently they rise to great heights. When about to alight, they circle several times over the locality before settling. When they do alight, they stand for a few moments with their wings held over the body and pointing directly upward. It has been suggested that this habit arises from a desire to test the firmness of the soft soil before they bear their weight upon it. When wading, they move about in a quick and apparently excited manner, "with much balancing and vibrating of

the body and graceful darting of the head in various directions," while they seek for their food.

The Greater Yellow-legs exhibits great anxiety and sympathy for a wounded companion and for a time seems to forget its own danger.

The range of the Greater Yellow-legs is an extensive one which includes America in general. It breeds from Northern Illinois and Iowa northward, and migrates south in the fall as far as Patagonia, some wintering in the Gulf states. In its migrations, it seldom remains more than a day or two at any one station, though the fall passage is somewhat

slower than that of spring, when it seems to be in haste to begin the work of nesting.

Audubon has said: "When in Labrador, I found these birds breeding, two or three pairs together, in the delightful quiet valleys bounded by rugged hills of considerable height, and watered by limpid brooks. These valleys exhibit, in June and July, the richest verdure, luxuriant grasses of various species growing here and there in separate beds many yards in extent, while the intervening spaces, which are comparatively bare, are of that boggy nature so congenial to the habits of this species."

EARLY AUTUMN DAYS.

When the summer days are over,
And the bees desert the clover,
When with golden-rod and aster vale and upland are a-bloom,
Then, with Nature, 'tis a pleasure,
To improve our humble leisure,
In her sylvan haunts to linger to imbibe some late perfume,—
To behold some treasure glisten,
And in peaceful thought to listen
To the sad prophetic voices of the season in decline;
For one feels the good of living
In accordance with His giving,
While observing Nature's wisdom flow from Nature's God divine.

Though have perished all the flowers
That kept fragrant June's rich bowers,
Yet the landscape is made brighter by the early autumn rain;
While the days grow fresh and clearer,
As the season's end draws nearer,
And the charm seems more consistent with the body and the brain.

With their mellow fruit resplendent
Are the orchards. The sun, pendent,—
Not unlike a golden jewel,—fills a setting very blue;
While a dreamy mist is trailing
Lake and river,—softly veiling,—
At the meeting of their waters, where the woodland shades the view.
Wondrous bright are vale and fountain,
Wondrous clear the distant mountain,
Ever gently with each other earth and heaven seem to vie;
Save where flocks of duck or plover,
Startled by the gunner, hover
Like gray clouds above the marshes and bedim the lower sky.

Now the rural tasks, in measure,
Have become a sort of pleasure,
To get in the splendid harvest have the husbandmen begun;
While the timid quail goes creeping
Through the wavy rows of reaping,
Or among the fragrant rowan, where the mower's task is done;
Oft we hear a loud, sweet whistle
From the stone-wall, edged with thistle,—
'Tis a warning from the sentry, as we near the feeding broods,—
In our mouths our hearts seem beating,
When, with sudden flight, retreating,
They, from under foot, go whirring through some recess in the woods.

And the birds that used to meet us
On our rambles, and to greet us,
With their joyful songs of welcome, from the boughs our heads above,
Have unwonted shyness taken,
Their familiar fields forsaken,
And no longer are rejoicing in the heyday of their love.
Now and then we hear one fluting,
Where the winter-green is fruiting,
But he does not seem contented with his sad and broken strain,—
For his comrades, uninspiring,
And his restless mate, retiring,—
Busy with the cares of journey,—only twitter and complain.

Our attention is diverted
To the flower-haunts deserted,
Where now brightly colored berries meet the eye on every side,—
Where the jay and catbird clinging
To the jeweled branches—swinging—
With their plunder merry-making, all the day are occupied,
Day by day, as woods grow stiller,
Locusts louder sing and shriller,
Till the very air seems throbbing with their little hissing tunes;
Insects everywhere before us,
With their fairy harps in chorus,
Conjugal ditties chirp while rejoicing in their honeymoons.

Soon will cease this joyous humming,
For the bitter frost is coming;
In the foliage around us we can mark his footsteps now,—
Where, among the oak and willow,
Interspersed are leaves of yellow,
Like the silver threads that mingle with the brown on manhood's brow.
And the west wind's early greeting
Tells us how the time is fleeting,—
That October is upon us, and the birds have southward flown;
That September's charm is over,
While, in solitude, the rover,
For the lovely things departed, is left weeping and alone.

—GEORGE LESLIE HUTCHINSON.

THE EVENING GROSBEAK.

(*Coccothraustes vespertinus.*)

The Evening Grosbeak would have a very limited range were it not for its erratic migrations. A constant resident of the regions from Manitoba northward and westward, it is quite a common winter visitant to the upper Mississippi Valley and the vicinity of the Great Lakes. But its winter visits are not confined to a given region. As if by fancy led, it is a casual visitor to Michigan, Ohio, Ontario, New York and the New England states. Neltje Blanchan says: "In the winter of 1889-1890 eastern people had the rare treat of becoming acquainted with this common bird of the northwest, that, in one of its erratic travels, chose to visit New England and the Atlantic states, as far south as Delaware, in great numbers. Those who saw the Evening Grosbeaks then remember how beautiful their yellow plumage—a rare winter tint—looked in the snow-covered trees, where small companies of the gentle and even tame visitors enjoyed the buds and seeds of the maples, elders and evergreens."

During the winter and spring, the Evening Grosbeaks are gregarious, traveling and feeding in small flocks. At such times the birds become very tame, seemingly ignorant of the dangers which surround them, when away from the quiet solitude of their northern home. When feeding, they will frequently allow one to approach within a very few yards of them. Mr. R. W. Shufeldt succeeded in taming a female Evening Grosbeak, which he fed on cedar berries. "She would whistle shrilly as soon as she caught sight of me coming towards her with a fresh branch loaded with her favorite food. In eating the berries, the outside skin and soft parts are rapidly removed by rolling them deftly around between the powerful mandibles, when the seed is quickly swallowed, and the

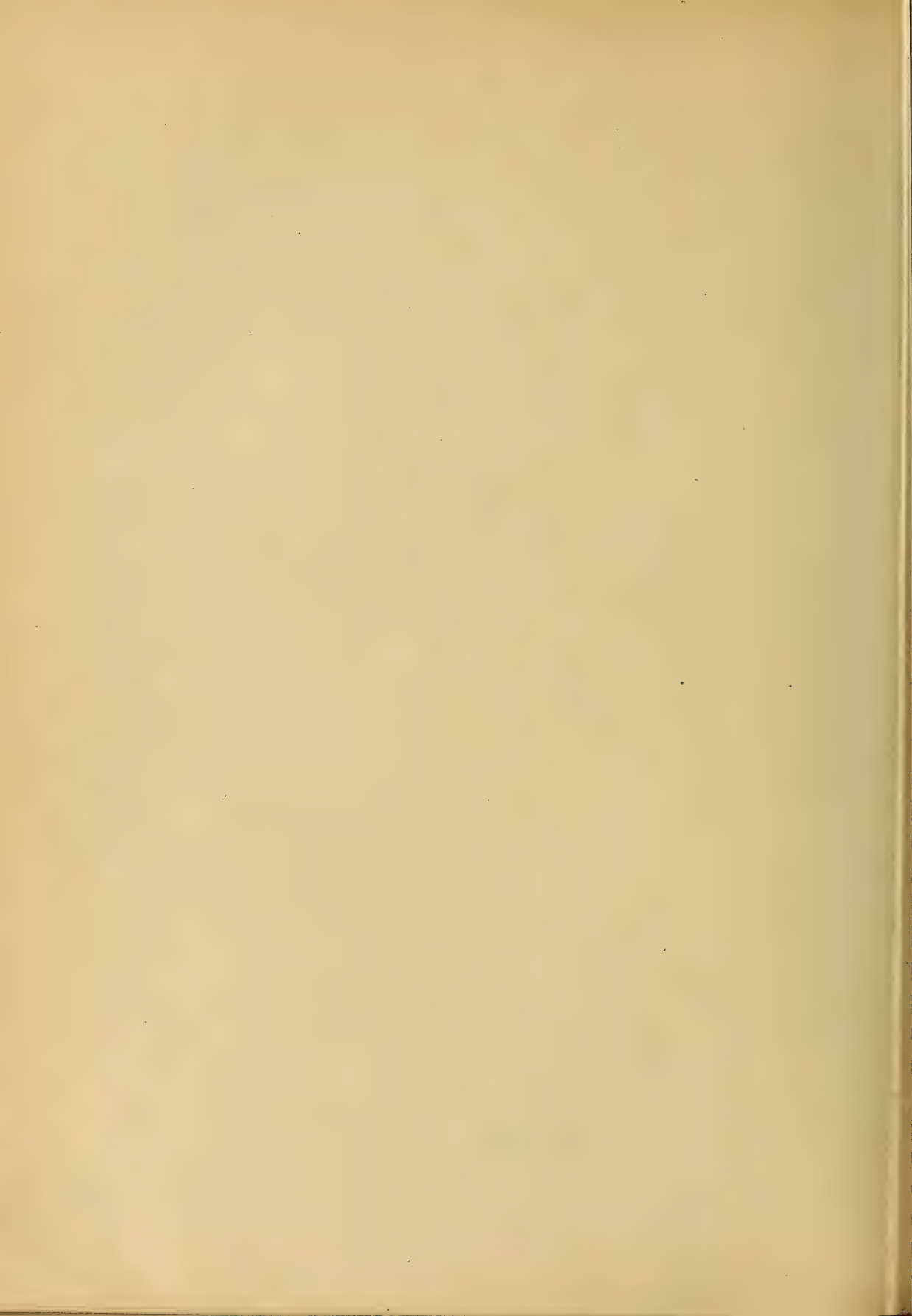
bird ducks over and picks a fresh one to extract the seed in the same manner, and this she would keep up until her alimentary canal seemed almost ready to burst with unnatural distention." Later, Mr. Shufeldt captured a male which soon became tame. Both birds would permit him to hold them and stroke their heads with his fingers.

These Grosbeaks feed extensively on the seeds and buds of trees, especially those of the box elder, maple, and elm. Mr. A. W. Butler says that while they are extracting the seeds of the box elder, they resemble clumsy crossbills. No doubt these birds in the regions of their summer homes, live upon the seeds of cone bearing trees. The strength and large size of their bills would indicate that they are probably used in breaking the cones for the purpose of obtaining the seeds. They have also been known to feed upon wild crab apples and also the domestic apples which have frozen while still hanging on the trees. It is well known that they are very fond of apple seeds. Sparrow like, they will hunt for seeds upon the ground.

Mr. Butler says of the notes and song: "The males have a loud call note, a sharp, metallic cry like the note of a trumpet, which they utter frequently when excited. The females chatter like Bohemian waxwings. Their song towards spring is a rambling, jerky warble, beginning low, suddenly increasing in power, and as suddenly ceasing, as though the singer was out of breath." Their notes, when uttered in concert, have been likened to the chorus arising from a flock of rusty blackbirds in the spring, and some have heard in the Grosbeaks' notes a sound similar to the "shrill piping arising from some frog pond on a quiet summer evening." It is said that the breeding season song of the male is



EVENING GROSBEEK.
(*Coccothraustes vespertinus*).
♂ Life-size.



quite like that of the robin at the start, but as related above, he stops suddenly about midway as if out of breath.

The nest and breeding habits of the Evening Grosbeak are not very well known. Only a few specimens of its nest have been taken. They were built but a few feet above the ground, and the materials used in their construction were fine twigs and rootlets, strips of bark and moss. The lining consisted of moss, hair and fine rootlets.

The tameness of the Evening Grosbeaks when they visit the more southern portion of their range, during the winter, should teach a lesson to all on the treatment of birds. They trust man because they come from a region where bird-stoning, the domestic cat, and the killing propensities of human beings are unknown. "Every wild and fearful bird is a sad comment upon the savage treatment bird-life has received at the hands of man."

THE AUNT JANE STORIES.

VIII. CURIOUS CAVES.

Aunt Jane had company to tea. A gentleman whose voice had often been heard in the capitol at Washington was her guest. To hear him talk was a rare treat even for grown up folks. The children at Woodland House were therefore duly grateful when Aunt Jane told them that if they were very well behaved indeed, they might remain in the parlor all the evening and hear the conversation. After supper, as all were gathering in the room, Howard said in a low tone to Bird, "He has been a traveler, I do hope he will tell about what he has seen."

"I can tell you now," whispered John, "that there will be nothing but politics. By-and-by I'll slip out—and you follow, for we can finish up the kites in the attic. Kites are better than politics in my opinion."

"Hush!" said Alice, "Aunt Jane is looking at us and some one is talking." The person in question was speaking of North Carolina as being in some respects a remarkable state on account of its "Thermal Belt," its precious stones, its gold and silver ores, and its mica and mineral mines. "Yes," continued the guest, "and its mountains compare favorably with some in the eastern states. Have any of you ever visited the 'Blowing Cave,' situated in one of the picturesque mountains of North Carolina?"

No one present had even heard of it except Aunt Jane, who remembered having read an account of it in some school reader, when she was a child.

"Do tell us something about it," she said, "for you see the curiosity of the children is excited at the very mention of a 'Blowing Cave.'" The children looked their thanks for this suggestion and the gentleman said: "The cave is now reached by a remarkable railroad. The construction of this road is a marvel of engineering skill. I scarcely know which to admire the most, the difficulties which nature has presented, or the skill of man in overcoming them. However, nature still has the supremacy, for the last twenty miles has still to be traveled in a stage coach.

"Imagine, if you can, how awesome it is to enter a cave, which, it would seem, must be secluded from the gentlest zephyr, only to find that there the wind never ceases, and man with all his wisdom and ingenuity has failed to fathom the mystery of its cause. Here in the most decided sense 'the wind bloweth where it listeth and no one knoweth whence it cometh or whither it goeth.' Sometimes the wind is gentle—only strong enough to blow paper about; again it will take off and carry away a man's hat, and sometimes, like a Her-

cules, it will take up a strong man in its viewless arms, and hurl him out of the entrance as if he were an intruder."

"When I get to be a man," cried John, with an eager look in his eyes, "I'll find out where that ruffianly wind comes from."

"I do hope you may," the guest responded, "for as yet no satisfactory theory as to its origin has been advanced."

"Have you ever examined other caves?" Howard asked in a tone of interest.

"Yes, several, and all of them were curious for one thing or another. I need not speak of the Great Mammoth which stands at the head of all caves, so far as size is concerned, for you are all, doubtless, quite familiar with it; but there is a cave near Staunton, Virginia, which I admire quite as much as the Mammoth, on account of the variety of interesting objects it contains, and it is of no mean dimensions either. There is one room in it called 'Gnome King's Palace,' which is two hundred and fifty feet long, and ninety feet high. By the way, do you little people know what a Gnome King is?"

"I do," Howard responded promptly, "I've read many fairy tales. Gnome is an ugly little dwarf, who lives under the ground to guard mines, quarries and caves."

"Right. I see you read to remember. Well, the 'Gnome' in Weyer's cave has a magnificent palace for a little dwarf. It has a grand, vaulted roof, and a perspective four times the length of an ordinary church. I do not know how much hidden treasure he guards in his subterranean abode, but he certainly must have an eye to art, as he has ornamented the room with a gigantic statue which bears the name of 'Washington.'

"But, besides this palace, 'Gnome' has a 'Cathedral' and a 'Senate Chamber.' The 'Senate Chamber' is really quite superior to the one we have in Washington. Its silence was profound. I noticed that the 'Speaker's chair' was empty, but the gallery was filled with visitors, who have waited there, who can say how long? There are two towering columns on a base of cornelian-colored stalagmite, a 'Jacob's Ladder,' a 'Bottomless Pit,' and

a 'Tower of Babel,' which is some thirty feet high and surrounded by pillars as of ice.

"There are also beds, curtained in delicate frettings of lace, pulpits with ivory tracings, besides common objects, such as vegetables and fruits in abundance. John, there is one thing which I am sure you would like to see. It is an 'Opossum up a gum tree,' as lifelike as possible.

"I shall see it some day," said John. "I'm going to be an explorer."

"I was much interested in a spring of sweet water, quaintly surrounded by stalactites and stalagmites," added the guest.

"If you please, sir, what is the difference between the two?" queried Edith.

"Stalactites grow down, stalagmites grow up; sometimes the two meet in mid-air and form a pillar. The growth of stalagmites varies according to the frequency of the fall of the drops of water which form them; these sometimes fall every moment; sometimes, three or four moments. There are some mammoth stalagmites, whose formation doubtless consumed hundreds of years for every single foot; but ordinarily stalactites are thought to grow at the rate of one inch in twenty-five years, while stalagmites grow only a quarter of an inch in the same period. Some caves have stalagmites twenty feet high. Think how long these must have been in forming."

John was not very apt in mental arithmetic and did not wish to stop to count up the age of an ordinary stalagmite twenty feet high, so he asked—"What is the very oldest stalagmite you ever saw?"

"There is a fallen column in Luray cavern, which is said to weigh one hundred and seventy tons. Scientists declare that at least seven millions of years were consumed in its formation."

"Seven million!" exclaimed the astonished children. "How did they ever find it out?"

"By computing the time it took to form the vertical stalactites which have formed upon it as it lies," was the reply.

"You saw that old ancient with your own eyes," said John in an awed tone of voice, as if the stone must have communicated something of its venerableness to the beholder.

"Yes, I 'saw that sight and lived,'" and the gentleman smiled and added, "We Washingtonians often visit Luray. According to the verdict of the Smithsonian Institute, the caverns of Luray are more completely decorated with stalactite and stalagmite than any other known cave in the world. There is also a formation called helactite, which is peculiar to Luray. It is a growth which abandons the vertical line, 'gets the better of gravitation,' is free to move in any direction, but prefers to grow up instead of down.

"Luray is also the only cave in the world which is lighted by electric lights. It would consume the entire evening if I should attempt to give a good description of the marvels of Luray. Children who visit the cave are especially delighted with the 'Fish Market.' There, hanging in a row, are black bass, silver perch, shad and mackerel, the bluish backs, white bellies and forked tails as perfect as if made of flesh instead of stone; and to add still more to their life like appearance, the water trickling over them gives them the moist look of fish, which have just been caught.

"Children are also charmed with the realism of the 'Wet Blanket,' a curious stalactite exactly resembling a wet, wrinkled blanket, hung up to dry, with drops of water still dropping from it. They also delight in exploring 'Saracen Tent,' which is made of rich brown stone, with the drapery lifted on one side, just enough to form an entrance.

"Quite as wonderful to them is the snow white 'Angel's Wing,' which is not far from a remarkable drip stone 'organ,' whose pipes give out when rapped, a number of musical tones. There are also 'chimes' forty feet long, composed of stone drapery, which vibrates to every touch.

"But I will not describe the 'Lion' and the 'Dragon' of Luray, or the other remarkable pieces of Nature's statuary, for I know you are now sufficiently interested to look up the subject for yourselves. Who knows?—Virginia is not far off—perhaps Aunt Jane may, one of these days, take you all to see the wonders of this cave."

"I'm sorry sir," said Howard, "that you supposed we knew all about 'Mam-

moth Cave,' as we really know very little, and would like to hear you talk about it."

"But you see, my dear boy," he responded, "that would be a 'mammoth' undertaking for one evening, and would give me the lion's share of the conversation. But, in order to stimulate still further your interest in this subject, I will tell you that the Mammoth Cave is properly named, for its two hundred and twenty-three labyrinthine avenues have a united length of nearly two hundred miles! There is amidst its countless wonders a 'conservatory,' which I would especially like to have you see. Think of walking in the cave for the distance of two miles, surrounded on all sides by myriads of flowers of every variety."

"Stone flowers! Oh, how lovely they must look—sunflowers, daisies and bluebells all in white," said Alice.

"Yes, and the scientists call these underground blossoms 'Oulopholites.'"

"It is very curious," Aunt Jane remarked, "how the cave flower and the cave animal imitate so perfectly the fauna and flora of the earth's surface."

"It is one of Nature's mysteries," was the reply. "There is in Wyandotte Cave, in Indiana a stone alligator, to a casual glance, as perfect in form as the living bats who house within the cave, hanging heads downward in groups of hundreds."

There was a shiver of fear from the girls when the bats were mentioned, and nervous Birdie put her hand to her head as if she felt one entangled in her hair, but John asked quickly, as if afraid the conversation might change from caves to politics, "What other curious caverns have you seen?"

"The Alabaster Cave in California is beautiful on account of its moss and fungus tipped with diamonds. 'Spouting Cave,' at Newport, is curious because of the manner in which its waves are discharged through a tunnel into the air. 'Swallow Cave,' at Nahant, is a long, gloomy cavern, filled with swallows. 'Thunder Cave' is appropriately named, on account of the strange reverberations of its waves which, during storms, can be heard a distance of several miles."

"Did you visit any caves while you were abroad?" Alice inquired.

"I was traveling in Austria, through the mountainous regions of Carniola, a

place abounding in caves, grottos and subterranean passages. I determined to visit the celebrated Grotto of Magdalena, at Adelsberg, although I felt quite certain it would not surpass, or even equal, the magnificent caverns of America. For along the course of the Mississippi River and its tributaries, it has been estimated that there are at least one hundred thousand miles of cavern, and these caves are fashioned on the large principle of the 'Father of Waters.'

"In the Grotto of Adelsberg I found one fine room, some eight hundred feet in length, whose walls were of rich, dark stone. From the canopy above hung the most graceful stalactites, covered with calcareous gems. The 'Gnome' of this Grotto must have had a taste for theatrical representations, at least he had prepared a magnificent stage curtain of semi-transparent stone. There was a small lake in the cave containing lizard-like animals which the scientists call Protei. They can live in either water or air, and have no eyes."

"Dear me," said Howard, how I wish I had one for a specimen to put in my aquarium. Wouldn't it be a curiosity though? I wonder if its eyes would grow if it lived a long while in the light."

"Do people who live underground lose the use of their eyes?" asked Edith.

"No, for they have artificial light. Your question reminds me of the salt mines, which I visited at Wieliczka. To me they were quite as interesting as the caves of which we have been speaking. These mines are very old. It is thought that they were worked as early as the ninth century. It is certain that they have been in use since the twelfth century. There is such an enormous mass of

rock salt that the town has been entirely undermined by the excavations.

"A city has been made underground in which it is said people have been born, lived and died, without ever ascending to the surface. The mines are in four stories, and are nearly two thousand feet deep. In the second story there is a beautiful lake on which I enjoyed a ride. Upon descending to the third story, I was surprised to find that the lake which I had rowed across was now directly over my head. In various places there were obelisks, statues and other works of art and the miners had also 'scooped' a Gothic chapel out of the rock salt."

"I'd like to live down there," exclaimed John; "I could have such fun making 'snow men' out of 'salt' and they wouldn't melt, either, just as I had them nicely finished."

"I think you'd find salt a little harder material to work with than snow, and would throw up the task pretty soon," observed Howard, skeptically.

"Have we any such artificial caves of salt in America?" Alice inquired.

"It is said that there are only two perfectly pure salt mines in the world and one of these is on an island in the state of Louisiana. It has not yet been determined how deep the deposit is, but several acres have been formed into vast chambers, which resemble beautiful cathedrals with floors and walls of solid salt sparkling with crystals. The roof is supported by salt pillars sixty feet square."

At this point Aunt Jane said "I'm sorry to interrupt, but it is the children's bedtime, and they must say good-night. I know they will have magnificent dreams of 'caverns measureless to man.'"

BELLE PAXSON DRURY.



THE COYOTE OR PRAIRIE WOLF.

(*Canis latrans.*)

"As mean as a Coyote" is a frequent expression of sentiment which may be heard in the vicinity of the Coyote's realm. It is a common saying of the frontiersman, and to him it means much for he despises this animal not alone because of its wholesale destruction of game birds, game mammals and domestic fowls and quadrupeds, but more, perhaps, because of its cowardly character and its propensity for howling. The expression "As mean as a barking dog" might be used, for that is the meaning of the Spanish word Coyote. A barking dog never bites unless it has all the advantage on its side. Such is the nature of the Coyote. "It carries its tail low—humbly—as befits a cowardly animal." It is bold only when in search of food and when it has a safe avenue of retreat behind it.

The Coyote combines many of the characteristics of the wolf and of the fox. It has the body, tail and limbs of the wolf, and the pointed snout of the fox tribe. In its nature and habits may be seen the swiftness of foot, the keen vision, the cunning, the shyness and the greed of both the wolf and the fox. The Coyote always seems unhappy. In "American Animals," Mr. Witmer Stone says: "Being active, healthy brutes, they undoubtedly enjoy their wild, unrestricted life of action and adventure, and are happy in their own way, except when suffering from unusually hard luck at hunting. Yet somehow they always look distressed and miserable, and their whining howl at night seems to express all the hopeless despair of some wretched spirit of the blind 'viewless wind' that whirls away before a storm 'seeking for something lost, it cannot find.'"

The Coyote is an animal of the night. Except in winter when its prey is scarce and hunting is more laborious, it seeks

its prey at night and usually hunts in packs. The pack, however, makes itself known for the Coyotes incessantly utter a "dog-like yelping, half howl and half bark" as they run, and the noise continues until the dawn of morning. Mr. William T. Hornaday has said: "As far as they can be heard, these wolves can be distinguished by their cries, and to those who have camped on the plains, or in the wild and weird 'bad-lands' of the great West, the high-pitched, staccato cry of the Coyote as he announces the coming dawn, is associated with memories of vast stretches of open country, magnificent distances, fragrant sage-bush and freedom."

The Coyotes live in burrows on the plains, which they have excavated for themselves, in washouts, in holes cut in the banks of streams, or in the burrows made by prairie dogs and other animals. They feed upon jack rabbits, prairie dogs, mice and other rodents, sage hens, deer and prong-horned antelopes. From the ranchmen, they occasionally take pigs, sheep, lambs and poultry. One thing may be said to their credit; they kill large numbers of the troublesome rodents, and also many rattlesnakes and other reptiles.

The peculiar cunning which these animals appear to show at times, seems almost beyond comprehension. Mr. Hornaday says: "The delicacy of the Coyote's judgment in keeping always beyond fair gun-shot is truly wonderful. If he is not a mind-reader, his actions belie him. Twice in Montana, each time for two weeks, have I tried my utmost to shoot a Coyote; but during those periods not one would offer more than a running shot at three hundred yards or more. Twice, however,—and immediately after the above,—when riding quite unarmed, have Coyotes sat down beside the trail, waited for me to approach within forty

yards, then yawned in a bored manner, and slowly trotted off. It is my belief that these animals knew perfectly well my inability to shoot." Not infrequently they will follow a hunter, always remaining at a safe distance, in order to feed upon the remains of game or food that he may drop.

Coyotes show great cunning when hunting large game, such as deer and antelopes. At such a time, a large pack takes part in the chase. Spreading out, they form a circle, if possible, around the game, in which it is kept in constant motion, until exhausted. Smaller game they may hunt singly or in pairs.

They exhibit considerable wisdom in avoiding traps and are very rarely caught in this manner. Their gluttonous appetite, however, commonly gets them into trouble, for they are killed by poisoned meat, in great numbers, in regions where they are the most troublesome.

The Coyote can be tamed. Brehm speaks of one of which he had the keeping. It was raised in a house and was as docile as "a good-natured dog, but only toward acquaintances. His actions were those of the domestic dog in every respect." He would leap with joy and wag his tail at the sight of his friends. When alone, he was very unhappy and gave voice to pitiful howls. He always showed a deep interest in the complainings of other animals and always "joined in the howl of wolves and even responded to the roar or growl of bears." One of his most interesting characteristics was his action when spoken to in a plaintive or pitying tone of voice. At such times "he howled or whined as some domestic dogs do under similar circumstances." Music also influenced him to utter loud outcries, but his howling at such times was evidently not meant to be taken seriously.

SETH MINDWELL.

WATER DOGS.

Did you ever see a Water-dog? No? Then you will enjoy a trip with me to the home of this curious little reptile.

Scarcely a mile from the northern city limits of Los Angeles, California, lies a range of foothills of the Sierra Madre Mountains. At the base of one of these ranges, in a beautiful little canyon, a small mountain stream winds its way—a stream that is small during the dry summer months but a veritable torrent after a hard winter rain.

The sides of the hills, which rise abruptly several hundred feet above this mountain brook, are cool and inviting the year around, as their slopes are shaded by the stately live-oak trees, which, as the name indicates, are green the entire year. The leaves of these trees differ from those of its eastern sister—the burr-oak—in that they are small and oval in shape and have edges armed with small points. Though the leaves are so small, the great number of them makes a dense shade.

There is also the ever green holly bush, which at Christmas time is ablaze with scarlet berries,—the sage, and a great variety of beautiful ferns and wild flowers, which add their glory to these hills.

It is little wonder that this beauty spot is chosen by many a picnic party. Such a party was enjoying themselves one June day, when one of the children spied some curious little objects slowly swimming through the water. At this time of year the little stream was very shallow, and its curious occupants easily captured.

They were conveyed home in a pail of water, together with several sticks to which were attached small, milk-white globes resembling gelatine, and supposed to be eggs of the queer little animal. Arriving home, a wise older member of the family informed the children that their queer pets were "Water-dogs," or "Mud-puppies."

These Water-dogs belong to the genus *Amblystoma*, which is the type of the

family *Amblystomidae*. They are from six to nine inches in length and have the appearance of gigantic tadpoles about to turn into frogs. These lizard-like creatures have four legs, a long flat tail, gill-tufts on each side of the neck, and an obtuse, flattened head. They are of a brownish color, semi-transparent, and are slimy, uncanny looking things.

The story that certain varieties of these Water-dogs or Mud-puppies are marketable in Mexico and are considered great delicacies, seems incredible. Surely you or I would as soon eat the lively little chameleon that darts across our path as we climb the mountain side; or the harmless horned-toad that should have its place in every returning tourist's collection of California curios.

These little Water-dogs were placed in a small tub of water where they could be watched every day. It was found that, whether or not a delicacy for epicures, they were considered palatable by hens and cats,—and to save their lives, a board was placed partly over the tub. For more than a week they thrived,—though on what it would be hard to say, as the crumbs thrown in to them remained untouched.

One day a hen was seen running around in the yard,—the other fowls in hot pursuit. This hen, like many another

bi-ped farther advanced in the scale of civilization, was so selfish that she had no intention of sharing this choice tit-bit with her companions.

A cry of consternation went up when it was found that this commotion was being made over a poor, helpless Water-dog. It was finally rescued from the hen, but was found in a dried condition much resembling glue, and was supposed to be dead. When taken in the hand and bent to one side, it remained as it was bent.

I admit that it is with some trepidation that I tell this story, for I realize that many of the stories told in innocence and truthfulness by the Californian are so wonderful and strange to the eastern reader, that they are not believed but rather put down as very clever California yarns.

And so when I tell you that the little Mud-puppy, when placed in the water, revived and came to life again, evidently none the worse for this experience, I hardly expect you to believe it. Indeed, I would not believe it myself had I not seen it with my own eyes.

There is not much more to tell about the Water-dogs. They lived in the tub for some weeks and finally, becoming an old story, no one paid much attention to them, and what eventually became of them I cannot say.

HARRIET WILLIAMS MYERS.

THE OLD STONE-PILE.

Year after year the old brown stone-pile stands,
Heaped long ago by patient, horny hands;
Around its feet the cooling fern leaves grow,
'Tis here the largest, reddest berries show;
The moss and lichens creep across the stones,
The drowsy bee o'er hidden honey drones.
The goldenrod its gleaming beauty flaunts,
The silk-weed sets its sails for distant haunts.
The woodchuck finds safe shelter down below
And here the last red rays of sunset glow.

—CORA A. MATSON DOLSON.

INTERESTING FACTS REGARDING BUTTERFLIES.

Let me smell the wild white rose,
Smell the woodbine and the May;
Mark, upon a sunny day,
Sated from their blossoms rise,
Honey-bees and Butterflies.

—Jean Ingelow.

There are found among the Butterflies some of the most remarkable illustrations of protective mimicry. It must not be thought for a moment, however, that this mimicry is a conscious act of a will power residing in the insect. It is the result of a very slow process of development by selection and probably has reached perfection only after passing through many thousand insect generations and through long ages of time. It is because of this mimicry that many Butterflies are immune from the attacks of animal species which would naturally prey upon them.

This mimicry is well illustrated by Butterflies found in our own country. The common reddish milkweed butterfly, *Anosia plexippus*, a specimen of which is pictured on an earlier plate in this volume, is an excellent illustration of an amply protected insect. Its secretions are strongly acrid and very distasteful to birds as well as to carnivorous insects. Thus this Butterfly escapes destruction and, multiplying rapidly, they are very common. It is said that it has been carried across the Pacific where it has gained a foothold in the warmer portions of Australia. It has also become fairly well established in some localities on the European continent. Because of this freedom from attack, the species of milkweed Butterflies are mimicked by species belonging to other genera. One of the admiral Butterflies, called the Viceroy (*Basilarchia disippus*) mimics the *Anosia plexippus* in a most perfect manner both as regards its markings and its coloring. Its larvae feed upon the leaves of deciduous trees, such as the oaks, birches, willows, and linden. The acrid secretion of the milkweed species is not present in the Viceroy, hence it is protected from

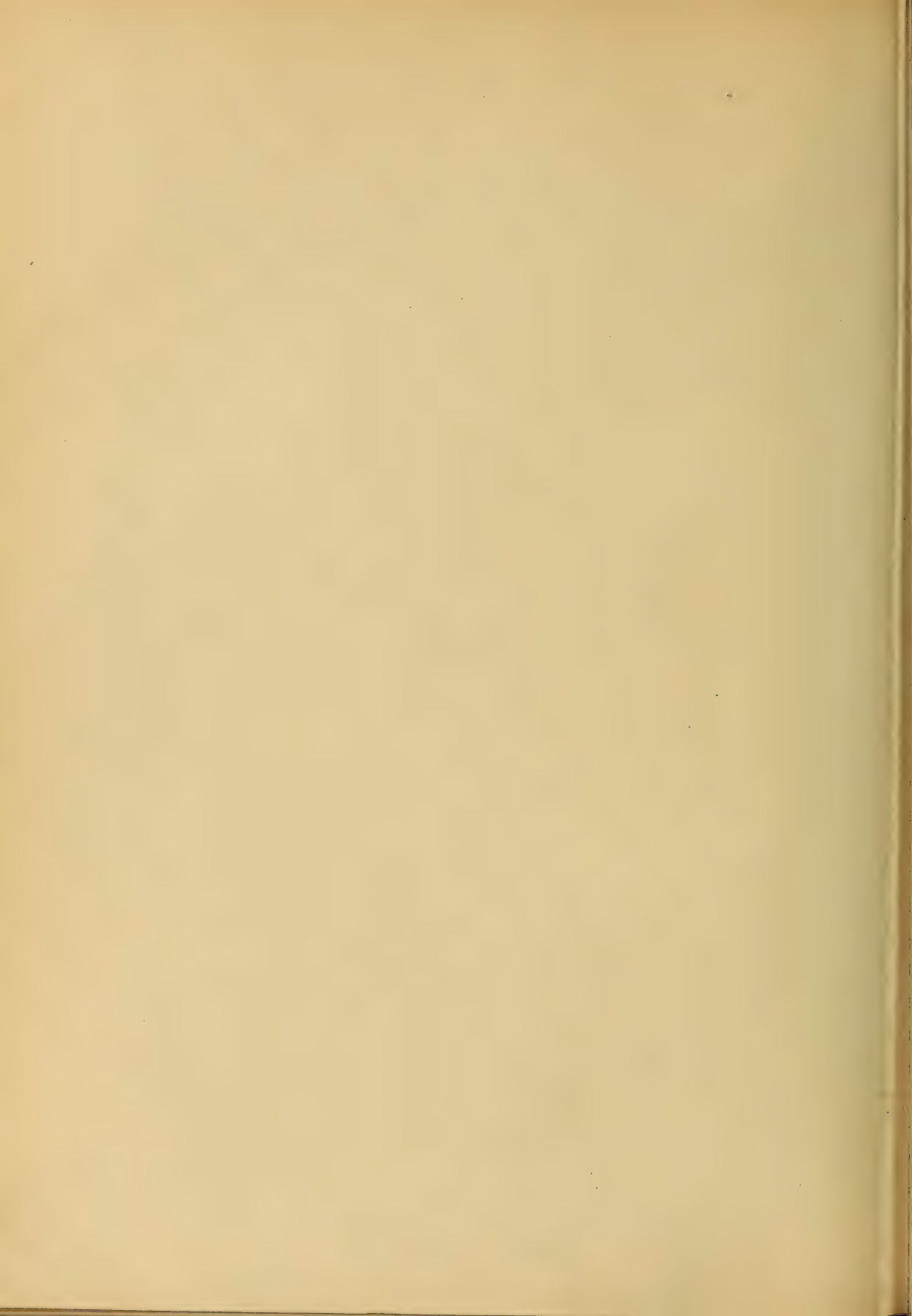
attacks only by the protective mimicry in its markings, coloration and general form.

The leaf-butterfly of India and adjacent regions is one of the most pronounced instances of protective imitation. In all the species of leaf-butterflies the wings are closed when the insect is at rest. The coloring of the under surface of the wings very closely resembles the coloring of a dried leaf. The veining of the leaf is also mimicked in the coloring of the wings. And, as if this were not a sufficiently accurate copy of a leaf, dark colored spots may be seen, at times, which closely resemble the patches of fungus growths so frequently seen on leaves. When resting, the leaf-butterflies stand upon a twig in such a manner that the tail of the closed wings rests upon a twig and forms a stalk for the imitation leaf.

There are many other instances of mimicry among the Butterflies, but space will not permit of their consideration at this time. Mimicry is also found in nearly all classes of animals. It occurs among lizards and snakes and even among the snails. The mimicry may not only be the copying of form and color markings, but it may also be an imitation of habits as well.

As a rule, the female Butterflies are much duller in color than are the males. Dr. Darwin has claimed that the development of the more brilliant colors of the male is due to sexual selection, because, as he says, "several males may be seen pursuing the same female." He suggests that the female selects the most brightly colored, thus ignoring plainer males which have gradually disappeared. The duller colors of the female have,





without doubt, been acquired for the purpose of greater protection. This protection is needed because they are usually of slower flight than the males and because several days are frequently required for the deposition of the eggs. The usefulness of the life of the male passes away just as soon as the eggs are impregnated.

While Butterflies are distributed all over the globe, they are much more numerous and, by far, more brilliantly colored in tropical regions. "Within one hour's walk of Para in Brazil, Bates found no fewer than 700 species." Butterflies are frequently quite gregarious and fly in very large flocks. At one place in South America, Bates says that he observed about eighty species in one flock, consisting of an enormous number of individuals flying in the sunshine. Most of these were males, the females remaining in the shade of the forest.

Dr. Darwin relates an interesting observation made during his voyage around the world in H. M. S. Beagle. He says: "Several times when the ship has been some miles off the mouth of the Plata, and at other times when off the shores of northern Patagonia, we have been surrounded by insects. One evening, when we were about ten miles from the Bay of San Blas, vast numbers of Butterflies, in bands or flocks of countless myriads, extended as far as the eye could range. Even by the aid of a telescope it was not possible to see a space free from Butterflies. The seamen cried out 'it was snowing Butterflies,' and such in fact was the appearance. More species than one were present, but the main part belonged to a kind very similar to, but not identical with, the common English *Colias edusa*. Some moths and hymenoptera accompanied the Butterflies; and a fine beetle (*Calosoma*) flew on board." The Butterfly of which Dr. Darwin speaks belongs to genus *Colias* or the "Sulphurs." These are the yellow or orange Butterflies so well represented in the temperate regions of the whole world. They are the yellow Butterflies which congregate in large numbers in moist places.

Catopsilia philea is one of the great sulphurs which may be given the com-

mon name Red-barred Sulphur. Probably one of the great sulphurs is the Butterfly of which Keats writes in "Endymion":

* * * * A wild rose-tree
Pavilions him in bloom, and he doth see
A bud which snares his fancy: lo! but now
He plucks it, dips its stalk in the water: how!
It swells, it buds, it flowers beneath his sight;
And, in the middle, there is softly pight
A golden Butterfly; upon whose wings
There must be surely character'd strange things,
For with wide eye he wonders, and smiles oft.
Lightly this little herald flew aloft.
Follow'd by glad Endymion's clasped hands;
Onward it flies.

The Red-barred Sulphur has been found as far north as Illinois, but it is only abundant in Mexico, Central America and southward.

The genus *Papilio* is a group of large and beautifully colored Butterflies of nearly world-wide distribution. Dr. Holland says: "There are about twenty-seven species of this genus found within the limits of boreal America. Our fauna is therefore much richer in these magnificently colored and showy Butterflies than is the fauna of all Europe, in which but three species are known from the Dardanelles to the North Cape and Gibraltar. The genus is wonderfully developed in the tropics both of the New and the Old World, and has always been a favorite with collectors, containing many of the largest as well as the handsomest insects of the order."

Our illustration depicts five species of this genus. *Papilis asterias* is the common Eastern swallowtail; *Papilio ajax* ranges over the entire country, east of the foot-hills of the Rocky Mountains; *Papilio rutulus* is a Pacific coast species, and may be called the Western Tiger Swallowtail; *Papilio lycimene* and *Papilio macrosilaus* are two South American swallowtails, the former having tailless wings. *Grapta comma*, so called because some of the markings on the hind wing resemble the comma punctuation mark, is found throughout the southern part of the British Possessions, and is quite generally distributed through the United States, being more common in the northern portions. Its larvae feed upon the plants of the nettle family.

THE TRUE STORY OF A BROWN THRUSH.

One June a pair of Brown Thrushes adopted me as a neighbor by setting up their domicile about ten feet from my doorstep. They chose for the purpose a bushy bois d'arc which, as with others in the grounds, had been let to take nature's way in shaping itself. Through a window, before which I spent much time, this bird-home was in plain sight, and from the first coming of the pair I gave them close and interested attention.

So, also, did a large, grey house cat given to sunning herself daily upon the sill of a door opening in the direction of the bois d'arc. However, the character of the tree set my mind at rest in regard to the nest, as no enemy could afford to try the intricacy of its thorny defenses.

After a while five spotted eggs hid the bottom of the nest, and in due time five clamorous babies filled it to the top. This was a time of constant purveyance for both birds. But the supply was plentiful and near at bill that year, and their expeditions after food did not often take the pair out of range of sight. A moist condition of earth and air daily brought up earthworms from between the mould-filled gaps in a brick pavement. These Madame Thrush chose as dainty morsels, and through this was wrought her undoing. One morning the grey cat feigned sleep, hidden behind the rise of the verandah step. From the other side, unseeing, came Madame with her usual brisk and graceful hop. A fat earthworm wriggled close to the step. The combination resulted in a tragedy. I sprang up and literally plunged to her rescue, but was too late. When I pulled her, ruffled and limp, from the jaws of the hotly-pursued cat she was quite dead.

This ill-befallment left the father unaided in the duties of rearing his most voracious family, so that he was kept busy early and late. Once the double duties of a rainy day quite tore him

asunder, divided as he was between a wish to cover his brood and their urgent need for their meals. However, he left the nest to the mercy of the all-day rain and heroically, and in a most bedraggled state, kept himself to the work of provisioning his house until an early bedtime settled the nest for the night.

From the first one of the nestlings was larger than his fellows, and time showed him to be greedier and more vociferous as well. His was the head always lifted highest over the edge of the nest, and his widely-opened, yellow-rimmed mouth secured him the largest share of everything brought to the home. One day, to the pathetic distress of the old bird, his usual upreach was high enough to bring him upon a thorn growing from the limb against which the nest was built. Caught through the loose skin of his neck he hung, closing the clutch of the thorn by ineffectual flouncings about, and when a hand was put upon the baby in order to lift it down the alarm and disturbance of pater familias was so great that he flew upon the head of the deliverer and executed thereupon a series of pecks so vigorous that blood was shed. But that he fully appreciated the favor done him, when understood, was afterwards proven.

One morning, about ten days after the incident, I was seated far inside the room, out of sight from the nest, and absorbed in the contents of a new magazine. After a time I began to be dimly aware of the flutter of wings mingling itself with the subject matter of the page, and upon looking up saw the Thrush upon the railing of the verandah. He had placed himself where a look through the open door could not fail of seeing him. As soon as he knew that he was observed he shifted to the lowest limb of an overhanging apple tree. Perching there, with a ceaseless nervous jerk of

his tail he seemed to try to tell me something I was too dull to understand. After regarding him awhile uncomprehendingly I returned to the magazine, but before I could take up the interrupted lines there was a swift dash into the room, and with a sweep of wings he brushed my hair in passing. Then alighting on the railing outside he again waited, with his brown body in a continued and anxious quiver.

"There," I thought, "the cat is after that nest!" and failing to note the further behavior of the bird I went hurriedly to the nest tree. This was unwise, as I found out afterwards. I should have followed the bird's movements. As it was I found an empty nest, the fledglings having been just brought off. So far as I could see this had been well done, but I failed to come upon a sign of even one of the closely-hidden youngsters.

The following hour brought home the man of the house, a person most wise in bird-ways, and the tale of the Thrush

was immediately told him. His search of the place was thorough, with a culprit trailing anxiously at his heels, and upon a bois d'arc a good distance removed from the home tree the large fledgling was found, hanging head down, caught by the thigh upon a strong thorn. It looked as though he had used a strong wing in his first flight, but had alighted clumsily, and toppling had fallen upon a thorn. In a flash I saw the wonderful intelligence of the old bird. He had asked for help where he had seen it given before, and failed of the providence he had learned to trust through a misunderstanding of a bird's way of asking assistance.

When taken down the little one was warm yet but quite dead. Then I looked at the beautiful, brown body stiffening upon the palm of the man of the house, the wise man, and wept. "It is as if I had cried to the powers above me in a great extremity and had found only an uncomprehending ignorance!" I said.

AUSTIN ARNOLD McCAUSLAND.

NOON.

Careless, rioting Noon, crowned queen of the Hours,—

Gold-clad, shimmering Noon, bride of the August sun,—

Warm and lazy I lie, prone in thy scented bowers,

And laugh with thy maiden Minutes, who trip past one by one.

Opulent, prodigal Noon, throbbing with life and with gladness,

Soothing the ache of sorrows as with some magical balm,—

Has the summer, love-smitten, seized with a mystical madness,

Plucked out his heart and laid it, pulsing and hot, in thy palm?

Palpitant, purple-zoned Noon, my eyelids are drowsily drooping;

Over the foot-hills of dreamland my thoughts and my memories stray.

Now, from thy zenith-wide throne, I see thee reluctantly stooping

To lay down thy scintillant scepter, oh passionate sovereign of Day!

—RAE MORTIMER SEYMOUR.

A MIDNIGHT EPISODE WITH VANESSA ANTIOPA.

(THE MOURNING-CLOCK BUTTERFLY.)

The year in which I began to gather and study "worms" and the different insects, held for me many a surprise as well as some disappointments. I recall a cold, wet afternoon in September, when Charlie, a bright little neighbor, and I, went out for what could be found, and to learn if the caterpillar and butterfly folks travelled without umbrellas.

It was the boy who first discovered a great tangled mass of black, spiney "worms" on a limb of willow, and his jack knife cut off the branch. We expected to see the bunch immediately separate into individuals, each rushing to shelter in as many different ways as there were caterpillars, but not even one offered to depart. If touched, they would only curl or straighten. They seemed chilled and dormant, so my little assistant carried the branch over his shoulder with the nest dangling at the back, and we returned home to pursue our investigations in more comfortable quarters. As I intended to drop the entire mass into the breeding cage which was then empty, I told Charlie to come into the house with his find, but as I entered, I was greeted with the information that my little mother, who is a helpless invalid, was again suffering, and at once went to her side, where I remained for hours, forgetting entirely my nest of "worms." At midnight, as I was lying down on a lounge in the sitting-room for a little while, I soon noticed here and there on the wall in front of me, several unfamiliar black things, and horrors of horrors! they were moving about. I hastily looked at the other walls, and jumped up with a sudden recollection of that bunch of caterpillars.

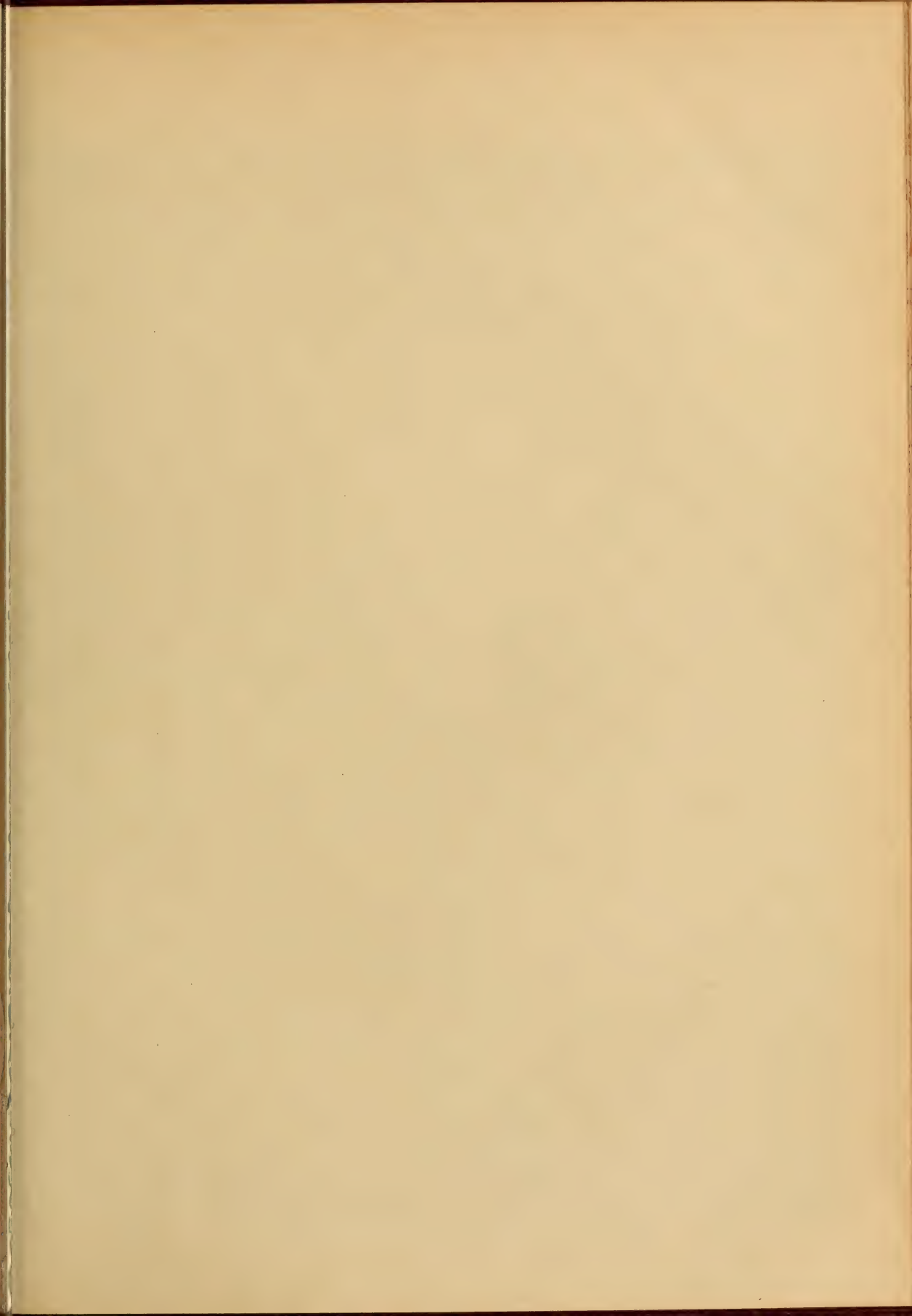
Charlie had dropped the branch inside of the door, and learning of my mother's

illness, had quietly stolen away. Not a "worm" was left in the nest. I called for assistance from every inmate of the place, and for an hour we hunted, brushing them from curtains, walls, pictures, etc., and shaking them out from the sofa pillows and all other available hiding places. After a thorough search, quiet was once more restored to the household, while only a few dark stains gave evidence of our late callers.

Before October we left the farm and returned to town, but in May, when we again went there for the summer, the black spots upon the wall made new paper a necessity. While clearing the house, I decided to air and dust a small attic, located above the sitting-room, out of which led a steep, boxed-in stair way. One sunny morning I unbolted and flung open the door, and at once started back in amaze. Was the place inhabited by bats? A perfect swarm of brown wings beat against my head and face, but there was a glint of delicate yellow to be seen, and also a bit of violet, as the frail creatures swept down into the sitting-room and so on into the sunlight of the outside world. Evidently many of those black caterpillars searched for on that September midnight, had escaped us and crawled under the door leading to this loft, where, unmolested, they had gone into their chrysalis state and eventually hatched into these beautiful butterflies, wintering as such in a dormant condition, needing neither food nor drink.

Awakening to greet the spring sunshine, had some unknown instinct led them to the place through which they had crawled in their earlier existence? It seemed as if they were but waiting for the opportunity which I now gave them, to go forth and reproduce their kind.

ELLEN ROBERTSON MILLER.





THE KINGBIRD.

• (*Tyrannus tyrannus*.)

Soft sits his brooding mate, her guardian he,
Perch'd on the top of some tall, neighb'ring tree;
Thence, from the thicket to the concave skies,
His watchful eye around unceasing flies.

—Alexander Wilson, "Kingbird."

Few of our common birds are better known than is the Kingbird. Few, too, if in reality there are any, are greater favorites with the people of our farming communities. Bold and without fear in the presence of other birds, the Kingbirds exhibit a tame and confiding spirit in the presence of man. Not infrequently they will nest in the trees and shrubbery of dooryards and orchards in quite close proximity to dwellings. One observer speaks of a pair which built their nest on a sulky plow. Two little girls visited the site of the nest every day and the sitting bird would almost permit the children to put their hands on it before it would leave the nest. They should not be classed as quarrelsome birds, for they generally live in perfect harmony with other species of the smaller birds which very frequently nest in the same tree. It is the birds of prey and the crows and blue jays which especially excite the animosity of the Kingbirds. It is then that their valorous and pugnacious character becomes evident. The male is the watchdog of the family. He establishes his lookout on the topmost branch of a high tree. He watches not only to protect his own home, with its eggs or young, but also those of his bird neighbors.

Indirectly the Kingbirds are of great value to the farmer who raises poultry. When one or more pair nest in the vicinity of a poultry yard the fowls are seldom molested by hawks or other birds of prey. Kingbirds "are a perfect terror to all hawks, instantly darting at and rising above them, alighting on their shoulders, or necks, and picking away at them most unmercifully until they are only too will-

ing to beat a hasty retreat." The only bird that seems ever to be a match for this spirited defender, is the little ruby-throated humming-bird, which is just as pugnacious and fully as aggressive, and has been known to force the Kingbird to flee from its attacks.

Mr. Ernest E. Thompson, in his *Birds of Manitoba*, relates an interesting observation. He says: "While climbing to a hawk's nest, the old birds came flying about my head uttering their piercing whistles; these attracted the attention and aroused the indignation of a Kingbird, who immediately gave chase and soon had the satisfaction of knowing that he was making himself consummately obnoxious to the hawks, for they could not keep him off and they would not fly away, so that he worked his tyrannical little will on them much as he pleased. As well as I could make out, he took several rides of over a hundred yards on one of the hawks, and I do not doubt when perched on his back he was not idle."

The name Tyrant Flycatcher is perhaps the proper name for this bird. To be sure he is a flycatcher as is well attested by the resounding snap of his closing mandibles after catching an insect, for which he darted, straight out from some exposed perch. But he is not a *tyrant* except toward the birds of prey and such species as might despoil his nest. Mrs. Olive Thorne Miller has said, "With the exception of the crow, against whom he seems to have a special grudge, I have never seen a Kingbird take notice of any bird unless he alighted near his nest, and the meekest creature that wears feathers will try to drive away strangers who approach that sacred spot." Mr.

Keyser once saw a Kingbird attack a woodpecker which had unconsciously flown too near its nest. "The Kingbird swooped toward him, and alighted on his back. The next moment the two birds, the Kingbird on the woodpecker's back, went racing across the meadow like a streak of zig-zag lightning, making a clatter that frightened every echo from its hiding-place. That gamy flycatcher actually clung to the woodpecker's back until he reached the other end of the meadow. I cannot be sure, but he seemed to be holding to the woodpecker's dorsal feathers with his bill. The bantam fellow that he was, he dashed back to the orchard with a loud chipping of exultation."

While the food of the Kingbird consists of both animal and vegetable substances, it has been shown that about ninety per cent of its food is animal matter. Beetles form the principal article of its diet, though its menu also includes grasshoppers, butterflies, wild bees, wasps, flies, spiders, millepeds and small minnows. The Kingbird renders a great service to horses and cattle in the killing of large numbers of gadflies, which greatly annoy domestic animals during the summer months. Nearly all are captured while the bird is on the wing, and in true flycatcher style it darts after the flying insect from a perch on an exposed limb of a tree or shrub, on a fence post or a telegraph pole, or on the apex of a tall field weed. The Kingbird has been accused of possessing a great fondness for bees and, for this reason, has been given the names Bee Bird and Bee Marten. Because of this supposed habit of eating bees, the Kingbird has been considered an enemy by bee keepers. However, Major Bendise, and other investigators, believe that the damage done in this respect is greatly exaggerated, and that but few working bees will be found in the contents of the Kingbird's stomach, the majority of the bees which are taken by the bird being drones.

Kingbirds place their nests in a variety of trees, shrubs and bushes. These may be orchard trees, the ornamental variety or the wild species. Major Bendise mentions twenty species of trees in which nests have been found. They have also been known to nest on the top of a fence

rail, and also on the top of a fence post. Both the male and the female birds assist in the construction of the nest. This is a compact and quite symmetrical structure and varies both in size and bulk. While the materials used vary considerably and depend upon kinds furnished by the environment of the nest, the typical nest is made of small twigs and weed stalks, interwoven with plant down, grasses, twine, moss and hair. The nest is lined with fine grasses, plant down, soft rootlets and some horsehair. It is said that in the willow swamps of Louisiana the Kingbirds sometimes use only the willow catkins in the construction of their nests. In many southern localities where the Spanish moss is abundant, it is frequently used in building the outer walls of the nest, almost to the entire exclusion of other materials.

The male is always solicitous for the welfare of his mate, her eggs and the young. While he spends much of his time guarding the nest from a sightly lookout near his home, he also relieves his mate, from time to time, from the duties of incubation so that she may obtain food. Though a pair of Kingbirds show a very marked devotion for each other and for their home and young, they are not very sociable with other pairs until after the breeding season is over and the fall migration begins.

The male Kingbird has various ways of showing his devotion to his mate. He is always affectionate in all his actions toward her and materially assists her in the feeding of their young. Mr. Ernest E. Thompson says: "The Kingbird has a peculiar method of expressing his devotion to his mate. On the warm spring evenings he may be seen leaving his post by her side, in some low tree, and launching out he rises to a height of thirty or forty feet in the air and gives vent to a tremendous sustained volley of screams and twitters, during which he continues to dart backward and forward in a frantic sort of way, making a very demonstrative but harmless charge at any passing bird, and illustrating several fanciful methods of flight until, having relieved his feelings and covered himself with glory, he swoops down into the bush to receive the applause of the only spectator he seeks to please."

THE BLUEBIRD'S HAPPY HOME.

When I was a little girl and sat playing on the fresh green grass at my auntie's country home, I heard a sweet voiced songster near me. Looking around, there on an old cherry stump sat a Bluebird. The sunlight made his blue feathers dazzling while he filled the air with his happiness.

The cherry stump had been sawed off just where the branches began, so that it might be used as a hitching post for the horse and its top was high above my head.

Over the grass and up the stump rushed Miss Pussy and Mr. Bluebird flew to an adjoining pear tree. Miss Pussy went up almost to the top of the stump and there did the queerest thing I ever saw a cat do. Just where she stopped she pushed her paw into a hole and I could see by the lashing of her tail and the savage way she kept thrusting her paw into the hole that she was greatly excited. At last, tired and discouraged, she came down and hid herself under the low branches of a nearby evergreen.

Mr. Bluebird soon returned and Miss Puss dashed out, bounded over the box border, tore up the stump and repeated her frantic performance. After watching her go up the stump three times, I called my auntie and said, "Something must be the matter with Kitty. She rushes up that old cherry stump, claws into a hole there and dances around it on three legs!"

My auntie laughed heartily and explained, "why, my dear, when we tried to use that old stump for a hitching post, we found it had rotted so it wasn't strong enough. After we abandoned it, a woodpecker enjoyed it a long time and two years ago a Bluebird and his mate entered one of the holes the woodpecker had

made, and found a home in the heart of the old tree. Down in that cosy, dark place, they built their nest and set up housekeeping. When the little master of the home, perched on his roof and told the world how happy he was in his new home Puss heard his singing. She tried to join him only to find that his little wife lived inside the tree trunk. Although not invited, Puss tried hard to enter the little door. When her head would not go in she tried her paw, which she continues to do whenever she hears the master's song. No one is so neighborly as Puss."

"Oh," I cried, "how frightened Mrs. Bluebird must be each time."

"I used to think of that, but after the little birds had been hatched and flown away the first year, I examined the place and found the nest rested in the heart of the tree just too low for Puss' paws to reach it. The wise little Bluebirds knew they had a safe home. Sometimes when Puss is too friendly, the little mother picks her paw, and Puss draws it back and after shaking it, retreats and gives the Bluebirds a rest."

"I'm so glad that cat can't reach Mrs. Bluebird and her babies," I exclaimed. "Yes," auntie responded, but just think how it must try Kitty's patience to know a whole nest of baby birds are born and reared just beyond her reach. Sometimes she becomes quite frantic and races up and down the tree, thrusting in her paws and crying unhappily. A dash of brilliant blue passed in front of us and there was Mr. Bluebird with a big worm. We heard a love note and saw Mrs. Bluebird's pretty head fill the hole while she received the tempting meal. Then her mate joined her in their happy home in the heart of the cherry tree stump.

FLORENCE BENNETT SCOTT.

THE WOOD DUCK.

(*Aix sponsa.*)

"Few if any more exquisitely beautiful creatures have been fashioned in the workshop of Nature than the Wood Ducks of America." These are the words of Dr. Dawson, and to them we may add the words of Mr. Chapman, "Woodland ponds and forest-bordered streams make a proper setting for the grace and beauty of these richly attired birds."

The range of these Ducks is quite extensive, covering temperate North America. From Florida to Hudson Bay they build their nests and seek their food in unfrequented woods in the vicinity of water. The favorite nesting sites are hollow branches of trees, an old woodpecker's hole, or a hollow stump. Those holes that overhang the water or are near to it are preferred by these birds. They will, however, find acceptable sites away from the water when those that they prefer are not at hand. In the absence of suitable holes, the Wood Ducks will place their homes among the branches, fashioning the nests out of grasses, twigs, strips of bark, leaves and feathers, all of which are loosely woven together to form a bulky structure. But their nesting in trees is not the only characteristic which marks these Ducks as peculiar among the birds of their kind. They perch easily upon the branches of trees and walk upon them; they do not quack, but have a pleasing and musical call; they are not dependent on aquatic food or even that which is found upon the ground, but also eat flying insects, young buds and, in the fall, quantities of acorns.

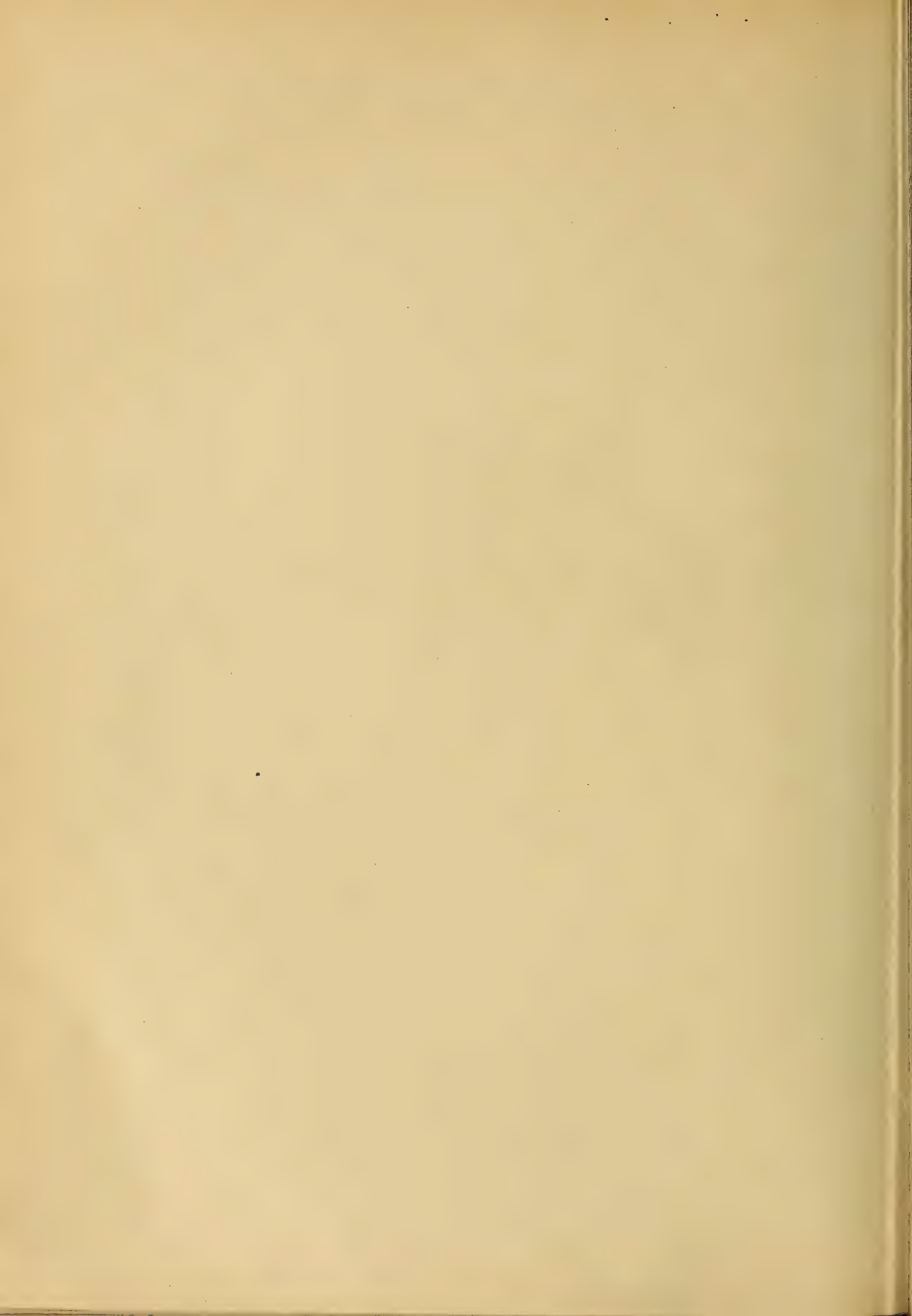
It seems too bad that because of a number of unscrupulous hunters, this gem of the Woodlands should be in danger of extermination. Then, too, the open season for ducks does not favor in the least the perpetuation of this handsome waterfowl. Its tendency is to assist in its extermination. The open or

hunting season for ducks varies in the different states, in general, the opening ranging from September first to fifteenth, and the closing from April fifteenth to May first. Thus the hunting season opens before the southern flight of most of the water fowls which nest in the far North. The first hunters are seldom satisfied with bagging mud and rice hens, but seek the native ducks, not waiting for the migrating species. A majority of the native birds are immature, and because of their unwary disposition, many broods of Wood Ducks are destroyed during the month of September. These birds are often victims of gunners on whose lands the birds may have been raised. Still more fatal to the successful propagation of the Wood Duck is the spring shooting, which might better be abolished in all states north of the Ohio River. Among the first of the spring migrants, are the Wood Ducks which arrive early in March, usually already mated, and by the tenth or fifteenth of April the females have laid their first eggs. This is a week or two before the expiration of what is called the open season in many states. Therefore it is not surprising that the Wood Ducks are threatened with extermination, when not even the law protects them during the breeding season.

When the young Ducks are hatched, if the nest is over the water, they are tumbled into it, where they seem to be as much at home as are the older birds. If, however, the nest is at a distance from any body of water, the young birds must be gotten out of the nest and assisted to the water. This problem the mother bird must solve. Authorities differ as to the mode adopted by the old birds. Some writers state that the young are taken to the edge of the body of water, one at a time, in the mother's bill. Other naturalists believe that the youngsters are tum-



WOOD DUCK.
(Aix sponsa).
 $\frac{1}{2}$ Life size.



bled from the nest to the ground below, their feet and wings becoming outstretched to assist in breaking their fall. The parent bird then leads them to the water. The latter explanation seems the more plausible to me, for I have known of instances where both the females and the drake have been observed leading their very youthful progeny, overland through the timber, on what seemed to be their first journey to the water.

Wood Ducks thrive in captivity and multiply rapidly. But why should we kill this splendid bird for food? There

is enough food for man without its death! Is it not better to say with Mr. Shields, "The Wood Duck is far too beautiful a bird to be killed for food. Its economic value is too small to be worth a moment's consideration. I would as soon think of killing and eating a Baltimore oriole or a scarlet tanager as a Wood Duck, and I hope to see the day when the latter will be protected all the year round by the laws of all the states in the Union and of all the provinces of Canada."

GERARD ALAN ABBOTT.

THE GREAT BLUE HERON.

SILHOUETTES.

I.

I saw him first across the leaden west
Slow flap his way, poise high the wings of slate,
The trailing feet upon an oak's dead crest
To anchor drop, a migrant ship of state.

II.

I saw him next among his bayous bleak,
Slim, sombre, mute, and grim, with listless wing;
With yet a fierce reserve of eye, a beak
The shafted lightning, egret crowned, a king.

III.

I saw him last where palms their plumes upreared,
The mystic ibis of my lady's bower,
An alien, stark, majestic still, a weird
Gray ghost of decorative grace and power.

—J. VALLANCE BROWN.

QUEEN NEPHILA WILDERI.

Away down in South Carolina, on a small island called Folly Island, Nephila Wilderi was born, and lived there as far back as the year 1863; she was at that time Queen of the Island; how long she had reigned I was not able to find out, but tradition says she was a most popular monarch.

Her home was so beautiful and attractive that all insects seemed to hover around it, but, woe to the blue fly, and his family! She was only a lady spider, and these she accepted as a right delicate morsel to be placed in her store house for a winter's day. Just as men love to chase the deer, so she loved to chase the June bug, (commonly called the *figeater*). She would hear his buzz in the distance, and would take her stand as near his track as possible, throwing out her net to entangle him, and he would unwarily be caught in her meshes; then she would wind around him yards and yards of her silken cords, until he looked like a silver ball. There he remained a prisoner until she was ready to devour him. Nephila was quite a mild spider otherwise, and did not carry the poisonous weapon of her inferiors.

She was a handsome specimen, very large, with a big head, snowy white, in fact, she was quite out of the ordinary, and looked just what she was, Queen of her race.

I am looking at her photograph while I am telling you of her wonderful history. Queen Nephila was discovered on the tenth of August, 1863, by Dr. Burt G. Wilder. He was at the time serving as a medical officer in the Union army, during the Civil war. A great battle was raging on Morris Island. Folly Island is just south and is separated from it by the Light House inlet, four hundred yards wide. The Queen had her Island well protected, as she thought, against

the enemy, but she was the child of nature, and knew nothing of the cruel hand of man. This island projects out some distance at low tide, and as the tide comes in, the river and inlet meet from opposite sides, then go fighting, dashing over its sand banks, reaching over them to the Morris Island shores and leaping into the Atlantic just on the other side. At this point on Folly Island, where river and inlet meet, stood a lone sentinel, and it stands there to this day, ever guarding his loved ones. Not a boat dared pass by. So well had he arranged his forts that they dared not approach these ever shifting sand banks and treacherous inlets for fear of being dashed to pieces and carried out to sea. At his back was a large stretch of Nature's own garden, thickly covered with a heavy growth of scrubby trees. It was there that his Queen dwelt, and he was her lone guard, and when in 1863 the enemy came in sight, what was one among so many. They stole upon him unawares, this Nature's sentinel, this grand palmetto. Man came with angry strife, amid Nature's own beautiful life, with no one to defend her from his cruel hands. This spot was truly Nature's home, alive with her beautiful shrubbery, and wild flowers. The sea oats waved their modest heads to the passing stranger. Except for the cry of myriads of sea birds that visit its coast and woodlands, an occasional hunter or fisherman, and the dashing of the waves against its shores, the Island was as still as death, and was loneliness in perfection. When the enemy wandered from his companions, and stole in upon her privacy, how innocently and sweetly did she receive him, her wild flowers looked up into his tired face, in quiet loving sympathy; the rustling of the palmetto leaves and the bobbing of the sea oats lulled him to

sleep; then the birds came, opened their astonished eyes in wild curiosity, and bursting forth in shrill notes of alarm, flew away to warn their friends of the enemy. But the stranger slept sweetly, blind and deaf to all of his surroundings, and would have remained in that state of oblivion, one cannot say for how long a time, if the sun had not turned traitor to Nature's child, and bursting forth in all its dazzling splendor, awakened him, and he opened his eyes in the beautiful home of our Queen. Living so peacefully, and unsuspecting of evil in Nature's hands, she did not dream of cruelty from the hand of man. Receiving him as a friend, her palaces, with their rich garlands were left unguarded, her maids were busy weaving her silken ropes, all was peace and happiness; when, to their astonishment and horror, their beautiful home was ruthlessly invaded, their garlands pulled down, their beautiful embroideries torn into bits, store houses broken into, destruction everywhere; poor Queen Nephila, brave as she was, gave way to tears, but seeing the distress of her subjects and children tried to forget her own misery in caring for them. Her courage and queenly bearing must have been beautiful to behold, but alas! courage, strength, pride, all are naught when the enemy is man, and you a spider. Queen Nephila and a number of her children and subjects were captured; a box was made for their prison. She, with haughty pride ignored the proffered hand of her enemy, and with queenly dignity stepped into her dungeon cell. The prisoners were taken to Boston as slaves, and were cramped in city walls for the rest of their lives.

Our imprisoned Queen toiled from morning until night, and produced from her own little body, one hundred and fifty yards of shining silk. Such a spider was never heard of before, she was given the name of her capturer, "Nephila Wilderi" and was exhibited as a great curiosity, before long faced, dreadful looking men who had no mercy for her delicacy

of feeling, and her name was seen every where in technical papers, and magazines, and was heard in lecture rooms. Poor "Nephila Wilderi!" She became worn and exhausted, and longed for her beautiful home, but no more was she to rest her weary head upon her own silken cushions, or swing from bough to twig, from twig to leaf on silken cords, on her native island again. She died in her prison home, setting forth to the end, a beautiful example of patience and obedience; she died as she had lived, a Queen, contending that she had not been conquered but overpowered.

The life of such a queen has not been lived in vain, her name shall be handed down from generation to generation as being the richest, greatest and most useful spider in the South. Professor Wilder visited Charleston, South Carolina, a few years ago, and while there, told of his wonderful discovery. He had left the city but a short time when one morning while walking in the garden with a friend, to our amazement, there sat two immense spiders, each over an inch long, with very large white heads, having the appearance of being covered with down. They sat with their little black eyes staring at us, and were truly a royal looking pair, sitting as center pieces to their beautiful handiwork, a silk network of measured lines and wide silk bands, all so evenly executed, and finished with a heavy rope of twisted silk. Oblong in shape, measuring nearly a yard across, it stood out strongly against a background of peach blossoms and was of a silvery whiteness. These great grand children of Queen Nephila sat there looking at us as much as to say, I have come to prove to you that the story you have heard of my great grandmother is true, and all doubting the truth of this strange story are invited to accept the cordial invitation extended them by her descendants to visit them at her old home by the sea where Nature will greet them as innocently, and sweetly, as in the year of 1863.

KATHARINE THEODOCIA CORNISH.

THE AMERICAN OSPREY OR FISH HAWK.

(*Pandion haliaetus carolinensis*.)

She brings us fish—she brings us spring,
Good times, fair weather, warmth, and plenty;
Fine store of shad, trout, herring, ling,
Sheep's-head and drum, and old wives dainty.

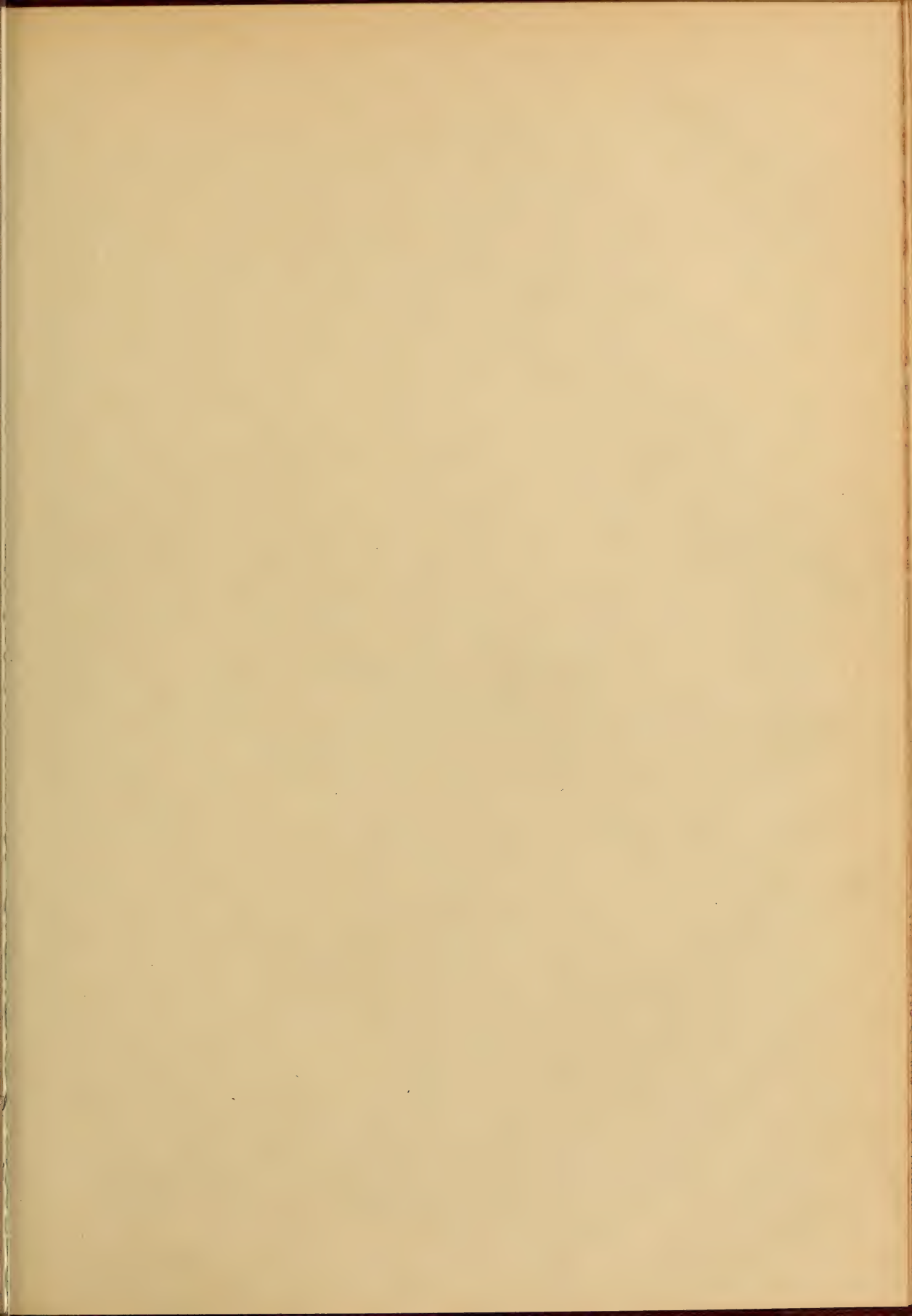
Yo, ho, my hearts! let's seek the deep,
Ply every oar, and cheerily wish her,
Still as the bending net we sweep,
"God bless the Fish Hawk and the fisher!"

—Alexander Wilson, "The Fisherman's Hymn."

The American Osprey is one of our noble birds and well deserves the respect and admiration of man. Gentle and industrious, it is also tolerant in its treatment of other birds and man, excepting in the defense of its nest and young. It has been called the Fish Eagle, and this title is more than appropriate for the Osprey possesses some characteristics that are even more noble than any of the attributes possessed by the eagle. Its affection for its mate and young, its attachment for its home and its environment are most marked. It loves the company of its fellows. "The social disposition of the Ospreys is in marked contrast to the more reserved life of the eagles." Moreover it labors for its food, and does not rest upon its perch awaiting a chance to steal the food obtained by the activities of other birds. This is not true of that "ill-chosen emblem of our national genius"—the bald eagle, which in many respects is no more noble than is the vulture. While the Osprey will eat dead fish when it has been unable to capture live food and is pressed by hunger, the eagle very commonly feeds upon the lifeless fish cast upon the shore by freshets, and in other ways. But this is not all. The eagle frequents the realm of the Osprey and takes the food honestly obtained by this fishing hawk. Mr. Silloway has well described this disreputable habit in the following words: "Sometimes the Osprey has scarcely emerged from the cloud of spray

and shaken the water from its oily plumage, ere the bald eagle is in determined pursuit. Though the Osprey is much swifter in flight than the eagle, it foolishly attempts to escape by rising with its burden. Its pursuer, unencumbered and fresh for the chase, screams its challenge and wheels ever nearer in narrowing circles, its unmoving pinious presenting a marked contrast to the rapidly flapping wings of the despairing Osprey. At the last moment, when the victorious eagle is about to strike the vanquished Osprey from above, the latter relinquishes its prey with a cry of anger, and the thrilling performance has ended, unless the eagle swoops in the path of the swiftly falling fish and attempts to take it for its own use." If the eagle does not obtain the fish, the Osprey never returns for it but patiently goes to its fishing grounds for another, which it may also lose in the same manner. It is said that the Ospreys that live in colonies frequently unite their forces and drive the bald eagles from the vicinity of their nests.

The sea coasts, the larger inland lakes or the greater rivers are within the range of the Osprey. It is a migratory bird and its range is an extensive one, including suitable localities throughout North America. It breeds nearly throughout this range, from Florida to Labrador, throughout the interior of British America, and in Alaska; however, it nests only near favorable feeding grounds. It win-





FROM ILL. BY E. M. WOODBURY

AMERICAN OSPREY.
(*Pandion haliaetus carolinensis*).
 $\frac{1}{2}$ Life-size.

COPYRIGHT 1900 BY A. W. SUMFORD, CHICAGO

ters from the southern United States to northern South America. In this extensive range many observers of bird life have the opportunity of watching this graceful bird. When soaring, the Osprey sails with almost motionless wings and its large curved wings are marked characteristics. One observer gives the following excellent description of its method of hunting and catching its prey. It is the observation of Mr. Charles S. Shick and is quoted by Major Bendire in his *Life Histories of North American Birds*, "It is interesting to watch the Fish Hawk obtaining its food. Sailing along from fifty to one hundred feet above the water, with its keen eye it can easily see any fish swimming close to the surface of the water, and as soon as it sees its quarry, stops its flight, remains suspended motionless in the air for a moment, closes its wings, and then darts downward like an arrow. It disappears under the water for a few seconds, and when it rises and again takes wing a shinning, wriggling fish can be plainly seen in the grasp of its powerful talons. It is a curious fact that this bird will never carry the fish with the tail to the front. Many times have I seen them turn the fish around in mid air." It is said that the Osprey has been known to strike its talons so deeply into the body of a fish so large, heavy and powerful that the bird, unable to release its hold, has been drawn under water and drowned. Expert as the Osprey is, it does not always succeed in catching its prey and often it is obliged to make several plunges before it is successful.

The nests of the Osprey are usually placed near or in the tops of large trees of various kinds. Sometimes they are placed on the ground or in the clefts of rocky cliffs. Major Bendire tells of a very picturesque nesting site which was located in the midst of the American Falls of the Snake River, in Idaho. "Right on the very brink of these, and about one-third of the way across, the seething volume of water, confined here between frowning walls of basalt, was cleft in twain by a rocky obstruction which had so far withstood the ever eroding currents, and this was capped with a slender and fairly tapering column of rock rising directly out of the swirl-

ing and foaming whirlpool below. On the top of this natural monument, whose apex appeared to me to be scarcely two feet wide, a pair of Ospreys had placed their nest and were rearing their young amidst the never ceasing roar of the falls directly below them." The Ospreys are also known to nest "in holes in the sandstone bluffs" along the Little Red River in Arkansas. Mr. Silloway says that, "sometimes the birds become so familiar that they make their habitation on the chimneys of rural residences, and an instance is recorded of a nest on the cross-piece of a telegraph pole."

In itself, the nest of the Osprey is not a thing of beauty. It is simply a mass of large sticks, dead branches, twigs, pieces of driftwood and a miscellaneous variety of odd sorts of rubbish which the environment furnishes. The nest is usually quite neatly lined with various kinds of materials which are easily obtainable. Some of these are seaweeds, grass, shreds of fibrous bark, cow dung, twigs, mud, corn stalks and feathers. The height at which the nest is built depends on the birds' feeling of security, and this varies from on the ground to a height of over eighty feet. It is said that the Ospreys will "frequently repair their homes in the fall, that the structure may more readily withstand the blasts of winter, though the work of repairing is principally done in the spring." As a nest is often used, probably by the same pair of birds, year after year and new material is added each season, it is not long before it becomes a very large structure. Nests have been found which measured more than five feet in diameter.

The Ospreys are gentle and have a remarkably kind disposition. They are notably affectionate toward their mates and their young. They become attached to their old nests, for they are used not only for raising the young but probably for a resting place at other seasons. They are brave birds and, unlike the eagles, will defend their homes against all intruders, even attacking man when he attempts to molest their eggs or young. They never molest the smaller birds and will even permit them to build their homes in the interstices of their own bulky nest. Mr. Davie tells of an Osprey's nest in the cav-

ities between the sticks of which the nest of a purple grackle was found which contained five eggs. In the construction of this Osprey's nest, a hollow branch had been used in the cavity of which a tree swallow had finally built its nest, and it contained seven eggs. Dr. A. K. Fisher says that the night-herons also nest in interstices of the Osprey's nest. The male assists in the incubation of the eggs and also brings food to his mate during this period. The young grow very slow-

ly and "remain in the nest for a long time after they are fully fledged before attempting to fly, and it is stated that the parents sometimes have to drive them from the nest." Even after the young have learned to fly they will still furnish them with food. Mr. Silloway says: "It is not uncommon to see the parents feeding the young birds while the latter are sailing about on wings which they have learned to use with almost the freedom of their elders."

OCTOBER.

Moon of the falling leaves:
Softly the ground-wind grieves—
Turning their rusted gold,—
Recalling primrose eves,
And yellow birds, now old
And fled from stress and cold.

Moon of the wandering kine:
On cruel farms they pine
Unfed, and moaning deep.
There sapless shrubs outline
The fence and stony heap,
Where browse the starving sheep.

Moon of the beechen mast:
In ancient forests vast,
How leisured feasts the bear—
Fattening for Winter's blast,
While sigh the tree tops bare,
Hazed in the purple air.

—ELIZA WOODWORTH.

The beautiful is as useful as the useful.—*Victor Hugo.*

BIRDS AND NATURE

CONTENTS

	Page
INDIAN SUMMER (Emily Dickinson) [Poem]	145
THE ROSE-BREASTED GROSBEAK (Addie L. Booker) [Illustration]	146
FOR A DREAM (Willis Edwin Hurd) [Poem]	149
THE HEN AND HER FAMILY (N. Penelope Covert)	150
THE LEAST SANDPIPER [Illustration]	155
THE EAGLE, THE OWL AND THE LITTLE BROWN CHAT (Viola Collins Hogarty)	156
MARIGOLDS IN NOVEMBER (M. D. Tolman) [Poem]	157
THE BLUEBIRD (Collins Thurber) [Illustration]	158
JIMMIE (Pearl McCowan)	161
THE SURGE SONG (Frank Farrington) [Poem]	162
MY FARMER FRIENDS—PART II (Warren Higgins)	163
THE BLACK AND WHITE CREEPING WARBLER (H. Walton Clark) [Illustration]	167
CURIOUS ROCKS IN THE GARDEN OF THE GODS (Mary McCrae Culter)	168
THE GOLDEN ORIOLE [Illustration]	170
THERE IS A SPIRIT IN THE WOODS (Charles Elmer Jenney) [Poem]	170
SOME CURIOUS ANIMALS (Belle Paxson Drury)	173
TO THE MAIDEN-HAIR FERN (Roland E. Conklin) [Poem]	176
AIR PLANTS (Mary Lee Van Hook)	176
THE SKYLARK [Illustration]	179
AN AUTUMNAL DAY-DREAM (Norman O. Foerster)	181
THE CATBIRD [Illustration]	182
THE CATBIRD (Juliette A. Owen)	182
THE CATBIRD (Ella F. Mosby) [Poem]	188
THE LOON (Frank Morley Woodruff) [Illustration]	191
NOVEMBER (Jac Lowell) [Poem]	192

EDITED BY WILLIAM KERR HIGLEY

ILLUSTRATED BY COLOR PHOTOGRAPHY

\$1.50 a Year. 15 Cts. a Copy.

A. W. MUMFORD, Publisher

378 Wabash Ave., Chicago, Ill.

BIRDS AND NATURE

Monthly, except July and August

TERMS AND CONDITIONS OF PUBLICATION

PRICE. Subscription price is one dollar and fifty cents a year, payable in advance; with 50 assorted pictures, \$2.00; single copy, 15 cents.

POSTAGE IS PREPAID by the publisher for all subscriptions in the United States, Guam, Porto Rico, Tutuila (Samoa), Canada and Mexico. For all other countries in the Postal Union add 30 cents postage.

CHANGE OF ADDRESS. When a change of address is ordered, both the new and the old address must be given. Postmasters are not allowed to forward second-class matter until postage is sent to prepay charges. It costs two cents per copy to forward this magazine. Subscribers who do not observe this rule should not ask us to send duplicate copies.

DISCONTINUANCES. If a subscriber wishes his magazine discontinued at the expiration of his subscription, notice to that effect should be sent, otherwise it is assumed that a continuance of the subscription is desired.

HOW TO REMIT. Remittances should be sent by check, draft, express order, or money order, payable to order of A. W. Mumford. Cash should be sent in registered letter.

AGENTS. We want an energetic, courteous agent in every town and county. Write for terms and territory.

RECEIPTS. Remittances are acknowledged by change of label on wrapper, indicating date to which subscription is paid.

MAGAZINES, back numbers, from 1897, 25 cents a copy, \$2.00 a year; the 84 back numbers for \$12.60.

BOUND VOLUMES, I to XVI, each 8vo, 244 pages, from 40 to 60 colored pictures, 8x10 in., cloth, \$1.50. Double volumes, half morocco, \$3.00. Sixteen single volumes, cloth, \$18.00. Eight double volumes, half morocco, \$18.00.

Exchange price for bound volumes when magazines are returned: Single volumes, cloth, \$1.00. Combined volumes, half morocco, \$1.50.

COLORÉD PICTURES, assorted as desired, 2 cents each; \$1.80 per 100; \$15.00 per 1,000. The 648 pictures for \$6.48.

PREMIUMS. Either of the following colored pictures sent free with subscriptions: (1) *Song of the Lark*, 18x21, or (2) *Gladstone*, 18x24, or (3) *The Golden Pheasant*, 18x24, or (4) *ten colored pictures from Birds and Nature*, or (5) *Three Forest Tree Pictures*, 9x12, or (6) *Set of 12 Industrial Pictures*.

OTHER PUBLICATIONS.

Little Folks.....	\$1.00
School Bulletin (Monthly).....	1.00
American Primary Teacher (Monthly).....	1.00
N. E. Journal of Education (Weekly).....	2.50
Educational Review (Monthly).....	3.00

Ten per cent discount on any or all of these when ordered in combination with *Birds and Nature*. Sent to one or several addresses.

All letters should be addressed to **A. W. MUMFORD, Publisher, 378 Wabash Avenue, Chicago**

\$4.10 for \$2.00 A COMBINATION OFFER THAT MEANS SOMETHING

BIRDS AND NATURE (one year).....	\$1.50
BIRDS OF SONG AND STORY (Grinnell).....	1.00
GAME OF BIRDS.....	.35
GOLDEN PHEASANT (Colored Picture).....	.25
LITERATURE GAME.....	.25
GAME OF INDUSTRIES.....	.25
TWENTY-FIVE PICTURES (From Birds and Nature).....	.50

ALL FOR ONLY
\$2.00

Postage or express 25 cents

The total amount of value.....\$4.10

BIRDS AND NATURE——Monthly; 48 pages, 8x10 inches; per year, \$1.50. A magazine devoted to nature, and illustrated by color photography. It is the only periodical in the world which publishes pictures of birds, animals, insects, flowers, plants, etc., in natural colors. Eight full page plates each month.
"Certainly no periodical, and probably no book, on birds ever found anything like such favor with the public as *BIRDS AND NATURE*."—*Evening Post, New York*

BIRDS OF SONG AND STORY——A bird book for Audubon societies, 16 color plates.

GAME OF BIRDS——Illustrations of popular birds, in colors true to nature, on 52 finely enameled cards 2½x3½ inches. Enclosed in case with full directions for playing. A beautiful and fascinating game.

GOLDEN PHEASANT——A beautiful Picture for framing. Printed in natural colors on fine paper 18x24 inches.

LITERATURE GAME——500 Questions and Answers in English Literature. 100 cards, 2½x3 inches. Interesting and instructive.

GAME OF INDUSTRIES——Educational—400 Questions and Answers on the great industries of our country. 100 cards, 2½x3 inches.

REMEMBER——A year's subscription to *BIRDS AND NATURE* and "Birds of Song and Story" alone amount to \$2.50. If you now take *BIRDS AND NATURE* your subscription will be advanced one year.

A sample of *Birds and Nature* for a dime and two pennies—12 cents in stamps. Send for Catalogue.

A. W. MUMFORD, Publisher, 378 Wabash Avenue, Chicago.

BIRDS AND NATURE.

ILLUSTRATED BY COLOR PHOTOGRAPHY.

VOL. XVI.

NOVEMBER, 1904.

No. 4

INDIAN SUMMER.

These are the days when birds come back,
A very few, a bird or two,
A backward look to take.

These are the days when skies put on
The old, old sophistries of June—
A blue and gold mistake.

O, fraud that cannot cheat the bee,
Almost thy plausibility
Induces my belief,

Till ranks of seeds their witness bear,
And softly through the altered air
Hurries a timid leaf!

O, sacrament of summer days,
O, last communion in the haze,
Permit a child to join,

Thy sacred emblems to partake,
Thy consecrated bread to break,
Taste thine immortal wine!

—EMILY DICKINSON.

THE ROSE-BREASTED GROSBEEK

(*Habia ludoviciana.*)

The summer range of the Rose-breasted Grosbeaks extends from Missouri and Virginia northward to Canada. They rarely breed as far west as Kansas and Nebraska. They winter in Mexico and Central America and enter the breeding district the last of April, and by the last of May they have reached the northern limit of their range, the males being a few days in advance of the females.

The mature adult plumage of the male, which is not attained the first year, is very attractive. It is black above, the wings are barred with white and it is white below, with a large patch of beautiful rose on the breast and under each wing. The female, in keeping with her timid, retiring nature, is very unassuming in attire, being dressed in a brownish, sparrow-like suit.

The female does most of the nest building, but her mate assists her in the duties of incubation and in providing for the nestlings. He further lightens her burden by always being near at hand, expressing his love and admiration in rapturous song. Mr. Chapman says: "His song tells of all the gladness of a May morning; I have heard few happier strains of bird music." He is a faithful protector. When danger threatens, the timid mother bird seeks refuge among the leafy branches, while he bravely hovers near the nest manifesting his anxiety in an unmistakable manner. The nest is composed of a loose outer layer of coarse weed stems and a thick compactly woven lining of finer ones, or of rootlets.

The Rose-breasted Grosbeak is a sweet singer, his notes are mellow and liquid, and though they have a plaintive tone, to my ear at least, his refrain is undoubtedly an expression of ecstasy. He is an incessant songster during the breeding season; from the time of his arrival till the young are full fledged his simple melody

is reiterated throughout the day and sometimes even at night. "A soft, sweet, rolling warble, heard when the moon is at its full on a midsummer night, is more than likely to come from the Rose-breasted Grosbeak." He has a most amiable and happy disposition, is not quarrelsome or meddlesome, yet he is ever ready to defend his own rights and those of his neighbors as well. In verification of the statement that he proves himself a most desirable bird neighbor, a neighbor in the truest sense of the word, I will relate an incident that recently came under my observation. A pair of these birds and a pair of robins located in the same tree and without the least show of hostility upon the part of either occupied themselves with their respective household duties. One morning a thievish jay came sneaking through the branches, evidently upon mischief bent, and finding the robins absent no doubt thought himself safe in pillaging their home. But the ever-watchful Rose-breasted Grosbeak, who was tenderly guarding his sitting mate, espied the work of destruction and, ceasing his song for a moment, furiously attacked the freebooter, literally making blue feathers fly. The crestfallen jay beat a hasty retreat, screaming with terror.

Rose-breasted Grosbeaks subsist on a mixed diet of insects and vegetable substances. They are the natural guardians of the potato fields, having a special fondness for the Colorado potato beetle, they assist very materially in the abatement of this pest. And this fact is so well known by appreciative farmers in some localities that it has won for the Grosbeak the title of Potato-bug Bird. They also destroy many other noxious insects. The vegetable diet consists of seeds and the buds and blossoms of forest trees. The only charge brought against them is that of stealing green peas, but the damage done



AMERICAN COLORTYPE CO., EHL. & H. V.

ROSE-BREADED GROSBEAK
(*Habia ludoviciana*).
 $\frac{1}{2}$ Life-size.

COPYRIGHT 1950, BY A. W. MUMFORD, CHICAGO.

is slight and surely no one would begrudge this beautiful songster a few peas even though he were utterly worthless from an economic standpoint.

The favorite haunts of these Grosbeaks are open timber lands and groves, and though they do not court the society of man sufficiently to be classed as garden birds, still they are not wholly averse to human companionship. Two pairs of these lovely birds graced our orchard with their presence one summer, and one pair of them chose their home in a tree

quite near the house, in fact, this tree stands in one of the most public situations about the place.

It could not be expected that a bird with the attractive plumage of the Rose-breasted Grosbeak would escape the eye of the millinery collector, and this partly accounts for the sad decrease in number of this beautiful and useful songster, which should be protected in every manner possible, because of its economic value to the agriculturist.

ADDIE L. BOOKER.

FOR A DREAM.

For a dream, O a dream in a checkermint bed,
I would walk for a hundred miles!
There the white clouds are sailing in blue overhead;
There's the tale that the thicket birds ever have said,
'Mid nature's most bounteous smiles.

And beside are the boughs of the balsam and pine
O'erhanging the couch at their ease;
They are drowsing the song of content that were mine,
Could I lie in their shadows on pillows of vine,
In mesmeric touch with the breeze.

Lying here would I drink of the nectar of spring
From the simple chalice of May—
From the breezes that carry the odors that cling
In the cells of the wind when the checkermints fling
Them afar on wings of the day.

And 'tis here I would dream of a rest that is sweet,
Delightful with balsamic balm;
Hypnotized by the brooklet that sings at my feet;
Mesmerized by the insects that hum, ever fleet,—
Dear nature's forget-me-not psalm.

And to all who'd be free for a day of your care,
There's the checkermint bed for you,
Close surrounded by songs of the grass and the air;
Full in touch with the nature whose spirit you bear,
In dreams that are restful and true.

—WILLIS EDWIN HURD.

THE HEN AND HER FAMILY.

The first of November, a foolish old hen marched triumphantly about the barn yard, parading a brood of young chickens which she believed were "veritable little angels with precious small wings." Didn't she know it was the wrong time of the year to dazzle with the splendor of a new title, and exceedingly cold weather for a show? But she utterly ignored these suggestions, and strutted proudly about, clucking exultingly in her recent joy. She was so absorbed in it that she heeded not the cries of her helpless offspring who were loudly objecting to the vanity of her proceedings. I had compassion for the shivering babies and immediately took up a collection, the fowl wrathfully presenting opposition.

I then captured Mother Hen after much difficulty and many exasperating attempts. Immediately she commenced to tune up. She put her windpipe into service and launched forth into one of those startling blood and robbery songs. She certainly has a musical voice, but as some time had elapsed since the machinery had been well oiled of course the sounds could be nothing but an ear-splitting grind. She no doubt thought the melody appropriate to the occasion. I have not the least hesitancy in asserting that it was a shrieking success. It was made doubly impressive by the accompaniment of her wings, beating on the double forte measures and fluttering on the pianissimo parts.

The encore at this madamly effort was tremendous. All the fowls in the barn yard were clapping their tongues. "Cut cut, cut taw cut!" The coarse tones of the males blended harmoniously with the delicate timber of the females and the cracked voices of the aged mingled confusedly with those of the younger generations. The applause was hearty and prolonged. It rose and fell, ran up and down the throats of four hundred fowls.

Yonder, at the hog pen, the call was taken up; an eighth of a mile across the creek "cut cut, cut taw cut" was heard. The refrain was echoed by others in the cornfield near the distant hedge. Far down the creek in a sunshiny secluded spot still others awoke. The farm of eighty acres seemed alive with "cut cut, cut taw cut." All of the tribe put forth renewed and extra effort. The thunder of approval increased until it was deafening. Pandemonium had indeed broken loose. Several old reprobate roosters in mistaken zeal flew at me and insolently expostulated. They were only deferred from pouncing upon me by a difference in weight. And they did give me several vicious pecks in the back—the cowards. I could not defend myself, for my hands were full.

But I had my revenge! I arrested one hen for disturbing the peace. You know that long slender portion connecting the head and body? Well, I applied a sudden pressure upon that pipe organ about midway; the music stopped immediately. As soon as the bellows filled with wind again the machinery ground out a new allotment. It took numerous applications of the breaks to shut off the sound. All the while that terrible encore was ringing in my ears I had to beat a retreat; it was too much for me. With the chickens in my apron, the old hen's legs in one hand and the other busily employed in cutting off the air draught, I got into the house and closed the doors tight. By this time the captive was speechless. She was bound with a shackle and put into prison.

She was slow to learn. She was very touchy. It took a repetition of the breaks daily for several weeks before she comprehended the significance of an emancipation from the abominable pressure. Then I could tuck her under my arm with no remonstrance.

I next turned my attention to the little

chickens. It was as comely a brood as ever touched one's admiration; fluffy, plump balls of down, which make the heart melt into tenderness at the sight of their dependent helplessness and their delightful peeps of "wit, wit wit, wit wit, wit," in grateful appreciation of warmth and food. Most of the chicklings were black with only one white spot upon them and that on their heads; several coal black; others black backs and white underneath; one an attractive, fat, yellow little fellow; another cunning yellow chick with a stripe of a darker hue on its back and a black and white spotted daintiness. I certainly agreed with Mother Hen that she had great cause to feel proud and especially when it was her first brood.

The chicklings, even in their innocent babyhood, displayed a difference in disposition. Each infant had an individuality all its own and also its own peculiar traits. A little black fellow, as soon as he was able to cheep manifested strongly the spirit of selfishness. This chick was the runt of the family. It always commanded attention because of its restlessness and great voice. If its wants were not attended to immediately its peeps would come forth in wonderful loudness for its size, growing more and more insistent until they ended in agonizing shrieks. Mother Hen was almost distracted, taking long, anxious looks at the cheeping chicken and stepping around hurriedly, as if on eggs. Often she was driven to the verge of desperation in vain efforts to find a remedy, for her limited knowledge and non-experience could not discriminate the trouble. Poor baby! It was not long for this world. It was sad to see the baby die! Perhaps we misjudged it. It may not have been selfish at all, but nature crying for relief.

I began a course of training with the chicklings on the temperamental plan. Every day I brought them into the house in a box and gave them license to stuff to their hearts' content, of which they were not slow to avail themselves. After which, instead of showing their appreciation of my kindness to them, they used what they considered the formula of common sense and wanted their mother. So "peck, peck, peck," my finger would register upon their backs. About a half

dozen tappings were administered daily for several days and proved to be sufficient incentives for silence with all but two obstreperous fellows who must have been roosters, for they had an eye for business.

They were so slow to appreciate the humor of the situation and it required twice as many tappings daily for them, and their course of treatment lasted a week. I also discovered that there was a great difference in mentality even in these two belligerents; Blackie was so much more persistent and unyielding than Spottie. Love making could be carried on with Blackie only by frequent reprimands to awake in him a respect for the presiding genius. This Blackie was the leader in everything.

Days went by and soon wing feathers sprouted and the brood began the exercises to develop wing power. No longer were they content to sit in the bottom of the box, Blackie showing his brothers and sisters how to reach the top. Like a flock of sheep they tried the jump and most of them landed. This so pleased them that they had a great yearning to try the sport again; in fact, to make a business of it. I was compelled to pass a prohibitory constitutional amendment. Taking each party by the wings it was given a swing. None of them, however, seemed to relish the experience of unexpected heights and with an earnest protest of energetic kicking and lusty screaming settled down into contentment except the two roosters. In the course of chicken events Blackie had the longest and most frequent swings. He forgot to kick and scream. I sometimes wondered if he enjoyed it, he appeared to take it so philosophically. He had a great capacity for the daily exercise and a week passed before his scientific mind became clear that a lowly seat is better than a high and mighty one.

For several days sickness held sway, and when able to resume the responsibilities of life I made a tour of inspection at twilight. One chicken was gone! What had become of it? I got a lantern and examined their domicile. The chicken was gone.

Every day when it was warm I placed the feathered family where they could play in the front yard. As they grew

older the chicklings became more and more venturesome and wandered far away from the mother whose territory was limited by a short cord. One day I found them near the cedars, making the rich, loose dirt fly with their tiny toes and chirping happily in the endeavor to earn their daily bread. It was a pleasing sight. The next day I could not locate them. Sometimes they followed the road to see something of the world. One evening another chicken was missing, and so they disappeared one after another. It was baffling. I could not find the least clue and searched in vain. I observed that after the ranks were diminished the band kept close to the Mother Hen for several succeeding days, then the fever of unrest laid hold again and they wandered far from the watchful care of their protector. Another went to parts unknown.

One morning the truth came out. I was in the garden watching a rooster and hen having a good social time scratching and picking. Suddenly a hawk swooped down over them. The danger came and went unknown to the two most deeply interested, and before the other fowls had a chance to scurry to cover or sound a note of warning. Too much of a mouthful saved them from the talons of the rapacious hawk. Later in the day I heard the swish of wings and saw the evil again. I rushed out; hawk, chick-ens, gone. After a long search I found the chicklings behind the open screen door on the porch—a great fear upon them. I gathered them up, but the silence remained unbroken.

In about two weeks Mr. Hawk again appeared. Poor Blackie was the unfortunate victim. His despairing shrieks were heartrending as the triumphant hawk bore him swiftly away.

Now only four chickens were left, good sized fellows, so I got a patent right invention for their protection. Once more the hawk threw his feet at them in his swift descent and met the shock of an iron cage.

As the days went by some new trait exhibited itself, which had to be cropped off or turned into a new channel. What a great responsibility it is to raise chick-

ens! I gave them a post graduate course in the intricacies of language, and they learned to talk quite fluently, "ah, ah, taw, taw, too too, coo coo, uh, uh uh, whoo-oo-oo, ah-a-a-a, ih, ih, ih," with such delicious inflections in their soprano, mezzo soprano and contralto and bass voices. Spottie in his big coarse voice which distinguished him, even in his babyhood, is not yet proof against grumbling, but his sisters can murmur the sweetest nothings. As I inspect them critically I feel like bragging of their splendid health, graceful forms and handsome plumage.

When they regained their liberty they expressed their lofty ideas in the form of elevated seats. One maiden choose a secluded corner; the other two and Spottie preferred the same quarter. Spottie, considering his right of masculine supremacy, crowded in between the two sisters every night, occupying the position of safety and warmth. Wasn't he like a man to demand the easiest chair and the most comfortable corner?

The three pullets were always kind and gentle, a credit to their community, right up to date and the coming new hens of the twentieth century. Spottie, whom I had trained in the way he should go, when he grew old went the way he wanted to go, a wild and wayward fellow.

Some time before they were to start out into the world to seek their fortunes the Ice Trust got hold with a powerful grip and the family were kept within doors. During those days a wonderful thing happened. One morning in this abode I found a beautiful snow-white egg. It was golden because of its rarity. I was puzzled. None of the inmates had been outside, and there had been no visitors. Every other day there was the golden egg. I questioned the family. Mother Hen looked wise but non-committal; the children equally the same. But I saw a smile in the corner of the eye of the pullet I loved best. I watched Mother Hen closely as she went about her household work. Suddenly I was surprised; Mother Hen had ceased to chuck. As I went off with the egg Miss Pullet said: "I'll bring you many eggs some day." N. PENELOPE COVERT.





LEAST SANDPIPER

THE LEAST SANDPIPER.

(*Tringa minutilla.*)

Among the shore birds no species is more interesting than the Least Sandpiper—the pigmy of them all. They are cheerful and “bustling little busy bodies,” always at work, and while searching for their food, seemingly conversing with each other in a most joyful manner, as they utter an almost constant peeping note. They seem to love company, for they not only associate with large numbers of their own kind, but also with other shore birds, offering harm to none and attending strictly to their own affairs. They become excited only when disturbed during the period of nesting, when they show alarm by flying in such a manner as to produce a “whirring noise,” not unlike the “wind-strokes of a startled grouse.” But these Sandpipers are not liable to be greatly disturbed during their breeding season, for they nest in the shore wilds north of the United States, where upon “the moss-clad crests of the highest rocks, within short distances of the sea,” they rear their young. But they spend but little time in preparing their homes, for the moss-covered rocks or earth furnishes the material, and in a slight depression fashioned in this mossy bed the four eggs are laid.

In a fascinating article on the habits of the Least Sandpiper, Dr. Coues has said, regarding one of the localities where they nest: “Fogs hung low and heavy over rock-girdled Labrador. Angry waves, pallid with rage, exhausted themselves to encroach upon the stern shores, and baffled, sink back howling into the depths. Winds shriek as they course from crag to crag in mad career, till the humble mosses that clothe the rocks crouch lower still in fear. Overhead the sea gulls scream as they winnow, and the murre, all silent, ply eager oars to escape the blast. What is here to entice the steps of the delicate birds? Yet they come, urged by irresistible impulse, and have

made a nest on the ground in some half-sheltered nook.”

Strange and obscure are the laws which govern the habits of birds. The Least Sandpipers seem to be patient in the bleak localities which they have chosen for nesting only until their young have safely grown to an age when they are able to care for themselves. Then they will frequently hurry back to the more congenial feeding grounds within the borders of the United States. Passing northward to their breeding grounds late in April or early in May, they will in some seasons, return as early as July. In their migrations, however, they are very erratic and will at times remain far north until autumn, where “when the young birds are grown strong of wing, family joins family, and the gathering goes to the sea-beach. Stretches of sand, or pebbly shingle, or weed-loaded rocks, or muddy flats bestrewn with wrack, invite and are visited in turn; and each yields abundant sustenance.” When at last they do start for the south, they come in large flocks and our marshes and beaches often seemed thronged with countless numbers of these active little birds and their larger relatives. In numbers “they become imposing, though singly they are insignificant.” A flock seen flying at a distance has been likened to a swarm of bees in search of a place of settlement.

The geographical range of the Least Sandpipers is very extensive, including the whole of both North and South America. During its migrations they are frequently common in all suitable places within the United States. They frequent the muddy banks of rivers, lakes, ponds and marshes. “The track of their tiny feet, imprinted on the sand of the sea-shore and the soil of the inland water, show where they have gone.” Their food chiefly consists of worms, aquatic insects and the smaller mollusks. Most

of their food is obtained by picking it from the surface upon which it rests, but they will probe in the marshy soil and wet sand with their awl-like bills, in a manner similar to that of the snipe, for hidden worms and larvae.

Few if any birds are more unsuspecting than the Least Sandpipers when they are in flocks consisting only of their own species. They then exhibit confidence in man, who is their worst enemy, often seeking their food almost at his feet. However, if the observer alarms the birds, they quickly take wing, and "like a flash with a startled *peep, peep*, and in a compact form, swiftly sweep about in an uncertain manner, canting from side to side, showing rapidly the white beneath and the dark above, a wavy, pretty sight, the

white at times fairly glistening in the sunlight." It is too bad that these harmless and attractive birds should be slaughtered by the sportsmen. Their small bodies at most furnish but little more than a mouthful of food. They are particularly the prey of the pot hunters. As a rule, when a flock is flushed by the discharge of a gun, which may have killed quite a number of the birds, they rise, circle in an erratic manner and return to the locality which they have just left. Thus they again expose themselves to the aim of the unsympathetic hunter. "Innocent of evil, confiding, sociable, lively little peepers, neither their faith in us nor their pathetic smallness protects them from the pot hunters. True sportsmen scorn to touch them."

THE EAGLE, THE OWL AND THE LITTLE BROWN CHEAT.

MODERNIZED FROM GRIMM'S TALES.

Ages and ages ago when kings and queens were scurrying to and fro building their thrones, and thrones who had no ruler to sit on them were looking this way and that for a person who'd fit, two little, dull-coated birds sat under a linden tree chatting together.

"Well, it does seem you're right, we should have a King, but, bless me, who is there would do? There's Mrs. Wren with a nest running over with young ones; she needs all the time and attention her help-mate can possibly give. Then there are the Orioles, but they think that their home is a throne in itself as it is." "Oh, we couldn't just pick out a King. We'd have to compete, and whoever should win would be crowned." "You always were wise. Shall we get at the matter at once and decide what to do?"

That's why for days old Bob White could be heard far and near singing "Choose a King!" "Choose a King!" until all the birds got together and planned for a test, and here's what they planned:

One morning as soon as the sun was up high in the sky they all were to meet in the churchyard just across from a house where two caged canary birds hung on the porch. The canaries were judges, and when their sweet "ready" was trilled the birds were to start; whoever flew highest would win and be King. Up, up, up they flew, higher and higher, some of them looking like specks against the blue sky. Now and then this bird or that one came back, other birds just skimmed along when they found they were tired, but all watched eagerly the one big bird in the lead; up, up, up higher and higher he went with each graceful swoop of his big outstretched wings. Not a bird was there near him; he paused and looked back; thousands of sweet notes of greeting came to him from the birds left behind, when—what was that soaring above him?—where had that tiny black speck in the sky been before their King stopped? Some one had seen. Nestled close on the top of the Eagle's big wing,

a little brown bird had been hid; he'd been saving his strength; and now that the Eagle had paused he flew off of his ship and on and on into the sky. Of course, he got highest, but not by his efforts alone. What were they to do? Have a bird for their King who hadn't played fair and who cheated? They whistled and twittered and trilled till the judges called order. The judges, they said, had decided to have one more test. The bird who got deepest into the ground should be King. To work they all went. The dirt and dust flew this way and that, and the Eagle's big talons scooped out heap after heap. But this little brown bird who had cheated before went into a Prairie Dog's hole which was already dug. Of course, he got further into the ground than the rest, but he didn't play fair, for he cheated. Before he had time to come out of his hole in the ground a bird guard was formed. A bird who had cheated them twice must be punished. The Eagle was King, and he, as their ruler, decided the fate of the cheat. "Let's not be rash," said the King, "this hole which he found shall be his own jail until he repents." Then they drew

lots for a watcher to prevent his escape. It fell to the owl, and he took up his post; all day he sat at the door of the prairie dog's hole till at last he grew weary; one eye would go blinkety blink, and somehow the other soon followed. Before the owl knew it he was sleepily nodding his head. "Aha!" said the cheat, "here's the chance of my life," and he slowly crept out. Away and away flew the little old cheat, afraid if he stopped for a breath that some one would find him; away and away over city and fields till he came to a marsh. A few little bushes were huddled together in the midst of the bog, and to them the cheat flew, and he's made his home there to this day. Whenever the other birds call him he shakes his head no, and replies, "Whip-poor-Will!" "Whip-poor-Will!" And the owl whom the birds found asleep at his post was given the punishment meant for the cheat. That's why all day when the birds are at play the owl is asleep in the prairie dog's hole, and at night when every thing's still the owl's "boo! hoo!" can be heard, for he still feels his shame at having been found by the Eagle, his King, asleep, when on watch of the little brown cheat.

VIOLA COLLINS HOGARTY.

MARIGOLDS IN NOVEMBER.

Up from the bleak and frosty earth ye lift,
Dear flowers, your cups of gold,
Undaunted; and sweet, subtile odors drift,
Cheering the air, so cold.

The sunshine treasured in your precious cups
Is doubly precious, now,
Since chill November's sunshine chary is,
The flowers to endow.

We greet you loitering on the autumn's rim,
As messengers of grace,
Ambassadors of Him who gave to earth
Your dauntless flower race.

—M. D. TOLMAN.

THE BLUEBIRD.

(*Sialia sialis*.)

Sing strong and clear, O Bluebird dear!
While all the land with splendor fills,
While maples gladden in the vales,
And plum-trees blossom on the hills:
Float down the wind on shining wings,
And do thy will by grove and stream,
While through my life spring's freshness runs
Like music through a poet's dream.
—Maurice Thompson, "The Bluebird."

One of the first birds to arrive in the spring migration is the Bluebird. One may wander through the woods in the early part of March, when the icy chill of winter and the warmth of the coming spring seem struggling for the mastery, and hear the clear, sweet warble of this beautiful bird. What wonder is it that the early New England settlers called him the Blue Robin and hailed his coming with delight.

The colors of the Bluebird are striking, especially in spring when they are at their best. The male's bright, ultramarine blue back contrasts markedly with the chestnut and white of the sides, throat and under parts. The female is not so distinctly marked as the male, the upper parts being tinged with grayish, giving the plumage a rather mixed appearance. The males arrive first, the females following several weeks later. About the middle of April courtship begins and the ardor with which the male pleads his suit is most interesting to behold. He will sit beside her on a branch or on a fence and raise his wings with a trembling motion, all the while edging toward her, and uttering his soft, clear warble. Not infrequently two males will pay attention to the same female, which will cause a keen and spirited rivalry between them.

After mating the pair build their nest in the holes of trees, in deserted woodpeckers' holes, in holes or cavities in fence posts, in boxes about dwellings and in bird houses built for them by man. The

old trees of an orchard are frequently chosen as nesting places. The nest is built of dried grasses, hairs or any soft material which may be obtainable. From four to six pale blue eggs are laid, which measure a little less than an inch in length. It is a curious fact that as soon as the young are ready to fly they are taken care of by the male, while the female raises another family. It is said that a third brood is sometimes started.

The Bluebirds are of incalculable value to the farmer as they devour vast numbers of insects especially during the nesting season when the young must be fed. For this reason it is highly desirable that the farmer should encourage the nesting of the Bluebird on his farm, and especially in his orchard, by erecting bird houses. The birds will pay rent for these houses many times over by destroying myriads of injurious insects. While a large part of the diet of the Bluebird consists of insects, they also eat seeds and berries.

The English sparrows as a rule prevent the Bluebird from nesting near cities or villages, driving it away when it endeavors to nest on or near a house. During the month of August the Bluebirds may be seen in large flocks, scouring the fields and the cleared woodlands after food. Although a summer resident in the northern part of the United States, the Bluebird is occasionally seen in winter in the Northern States.

In October or November the Bluebirds



BLUEBIRD.
(*Sialia sialis*).
Life-size.

COPYRIGHT 1900, BY A. W. MUMFORD, CHICAGO.

begin their southward journey. At this time their plumage is mixed with gray and their song is reduced to a single mournful note, in great contrast to the cheerful warble of spring. The winter is spent in the southern United States or even farther south.

The Bluebird ranges throughout the eastern part of the United States from the Atlantic ocean to the eastern base of the Rocky Mountains, and from Manitoba, Ontario, and Nova Scotia to the Gulf States and Cuba. Curiously enough, it is a permanent resident of Bermuda.

COLLINS THURBER.

JIMMIE.

It had rained all night, but the sun rose bright and clear that morning, making a glittering display of diamonds on tree and leaf and every blade of grass. The world was very beautiful as I stood by the gate.

But what was that little brown bundle slowly making its way across the road? Could it be a kitten? Whatever it was it was certainly very nearly drowned, for the poor little thing was wet to the skin.

I picked it up and found it was too weak to resist very much, although it tried feebly to bite me. It was certainly the strangest looking kitten I ever had seen. But if it was not a kitten what could it be? I carried it into the house to papa. He looked at it, then laughing heartily, exclaimed: "Why, child, you've caught a woodchuck." If I had known what he was before I picked him up I should have been a little timid about touching him, but now that I had the poor, weak, wet little thing in my arms I begged to be allowed to keep him. At first papa laughed at the idea, but I coaxed so hard that he finally consented, and Jimmie, for that was what I named him, soon became a regular inmate of our house. He soon learned to love us and was more interesting than any kitten I ever had had.

Papa fixed a long narrow box for him. Half of it was to be used for Jimmie's bedroom, which could be shut up by means of a little door, so Jimmie could not get out. This was done because mamma, who was not particularly fond of him, did not relish the idea of a wood-

chuck running around the house, especially at night. The other half of the box was filled with gravel, for Jimmie dearly loved to burrow in the ground, and I thought this would make it more homelike for him. He was as neat as a kitten and always washed his face very properly after eating.

In some ways he was much like a child, and oh, how he did hate to get up in the morning. I would find him curled up in his box, looking like a little ball of fur. But he would pay no attention when I spoke to him, and would stand considerable pulling and pinching before he would stir. Finally he would whine and cry, very much like a baby who does not like to be wakened, and sometimes by the time he was fully aroused would chatter like a little magpie because I had disturbed him.

He soon learned his name and would follow us about the house just as a kitten would do. When he felt playful he would often grab mamma's dress and jerk it, then scamper away and watch her, and as soon as she resumed her work he would try it again. But Jimmie was a little cry-baby, and if we made him stop doing anything which he wished to do he would cry or at least that's what I called it. It certainly was a very cross, fretful little noise that sounded much like a baby crying. When angry he would chatter and scold and sometimes even bite.

He had a great passion for looking out of the windows and chattering at the people going by. But he usually got into trouble, for, if the window was up, he

would climb between that and the screen. Then his long toe nails would get fast in the screen and he would cry until some one freed him.

We used to feed him vegetables and bread and milk. Sometimes I would take him out to the garden and let him help himself. It was fun to see him pick carefully one leaf of lettuce at a time and sitting up hold it between his front paws while he ate, very much as the squirrels do.

One day I thought I had lost him, for he went under the sidewalk and would not come out. Finally I gave up trying to coax him and went into the house to help mamma get supper.

By-and-by I heard Jimmie crying, and then, oh, how he chattered. I had never heard him chatter so hard. Mamma said to me: "Jimmie's in trouble." So out I went to see what the trouble might be. Sure enough there was Jimmie in a corner and a big black dog was looking at him, as if he would like to swallow him. But when Jimmie saw me he suddenly became very brave and started toward the dog like a true soldier. But when the big

dog growled and jumped towards him he forgot his bravery and backed slowly towards me, chattering all the while. He was very willing now to go into the house with me.

Jimmie was an interesting creature. He was only a little fellow, you know, and was probably about eight inches long and nearly as wide. He was rather flat and appeared to have no neck at all, his head joining his body just where his neck should have been. It was impossible to fasten him with a cord, unless you tied it to his feet, for if you tried to tie it around his body it would slip off at one end or the other, according to the way he happened to pull. His fur was a grayish brown.

Jimmie was not always good and sometimes he got into mischief. One day he found my sister's box of photographs and destroyed the box, and chewed the corners of several of the pictures. This was too much and she said: "Jimmie *must* go, so after much deliberation I gave him to a little friend. However, I often went to see him, and he knew and remembered me for quite a long time.

PEARL McCOWAN.

THE SURGE SONG.

Rolling up from the shimmering sea
Into the mountain lands,
Comes the song of the surges free
That march along the sands.

Wild and sweet the lilting beat
Of surf on the sandy paves.
A sea-born breeze a-winging fleet,
Brings music from the waves.

Laugh the mountain tops and croon
O'er to themselves the song;
Murmuring on the echoed tune,
The distance-mellowed, rumbling rune
Of the surges pulsing strong.

—FRANK FARRINGTON.

MY FARMER FRIENDS.

(IN NORTHERN INDIANA.)

PART II.

If you want the effervescence of merry bubbling life go out to the meadow some beautiful morning in June when the clover is in bloom, when the timothy stalks are nodding their plumes, when the wind makes the wheat field ripple and fall in endless waves. Then the bobolink bubbles over with joy and makes of life one long continuous holiday. It is very difficult to find the nest as he will settle with equal composure in a dozen different places. Read what Mrs. Olive Thorne Miller has to say of finding a nest. With us he is a merry eccentric singer that leads a life of joy and sunshine. When he migrates and reaches the rice fields the case is different. Then he is merely a gourmand that will make an excellent pot-pie. We find in him a great enemy of insects, one of the pleasantest of companions and a light-hearted summer resident.

The whip-poor-will and bull bat are both night birds. They consume a great number of insects, especially those that fly about in the evening.

Of the flycatcher family the most common in this locality are the kingbird, wood pewee and great crested flycatcher. All the members are useful as they destroy great numbers of insects.

Though the kingbird has been accused of killing bees, investigation does not bear out this idea. He is the most common about here and makes a vigorous policeman from whom the hawk flies in terror. They frequently build close by the house in some of the fruit trees.

Space forbids that each sparrow be taken up separately. As they all belong to the finch family the bill is not suited for worms as in the case of robin or bluebird. They destroy a great many insects but the main diet is seeds. Of these, great quantities are consumed but almost all are either useless or noxious. On the whole they are a help to the farmer.

Nor can we enter into the great family of warblers, interesting as they are. All of them are enemies of insects and worms. The majority pass on north but quite a number remain. Among them

are the red-start, black-and-white creeping warbler, blue-gray gnatcatcher and the blue-backed warbler.

So far, we have been considering only those birds which spend the summer here. But they are by no means the only ones that inhabit our woods and fields. While we are discussing the warblers, it is but a step to some other birds that frequent the woods, such as the chickadee, nuthatch, crested titmouse and brown creeper. These four birds in company with the hairy and downy woodpecker may be found every day. It is hard to tell which is the most interesting: the merry chickadee, the titmouse with his erect crest, the nuthatch with his smooth head who "follows his nose" or the tiny brown creeper who can hardly be distinguished from a piece of rough bark. They are all enemies of the countless insects that infest our trees. I never yet have gone to the woods and searched for any time that I did not find these merry little fellows often in company with the downy or hairy woodpecker. Weather seems to be a matter of indifference to them, for is not their home in the forest itself?

From these, we naturally turn to the woodpecker family. The most common in this locality are the hairy, downy, red-head and yellow hammer. The first two are more quiet and are frequently passed by. The hairy can imitate the call of a robin so closely that I have been deceived into thinking some robins were still lingering away in December. But the other two are so well known as to make it a waste of time to describe them. All four are destructive to insects, especially of ants. The red-head must have a change of diet when cherries are ripe but the good he does far outweighs the evil. With other species I am not familiar.

Probably the most conspicuous bird of the dooryard is the blue jay. He is bold and aggressive, one that has the stamp of individuality. There is no mistaking that blue coat and that strong voice. He is the noisiest one in the dooryard and has a pugnacious temper to make good any threat or defiance. Much has been

written and spoken against him but a careful examination of facts goes to disprove this. He does destroy eggs and sometimes young birds. But on the other side he has a good appetite for injurious insects. He is quick to adopt any new food so he is particularly valuable should any new kind of insects arise.

While we are speaking of jays let us examine the actual facts about crows. They have a weakness for sprouting corn, eggs of different kinds, watermelons and roasting-ears. But they also destroy countless insects besides some fieldmice. One writer speaks of a field that had its crop of hay destroyed by some pest. The crows got after the pest and treated the field much as a flock of chickens would. In August they live principally on grasshoppers. From a purely business point of view it would be advisable to protect them unless some one falls from grace and gets to eating eggs, in which case the old shot-gun had better be hunted up.

I believe of all our birds I have more genuine love for the bob-white than any other. He is so strong and breezy in manner, has such a fine voice and is so cool and confident. Unlike so many others he thrives best in civilization. He and the farmer should protect each other: the latter, from noxious insects: the former, from noxious hunters. There are few prettier sights than that of a family of young quail. Such cunning little balls of down, and how confidently they walk, secure in their mother's protection. Their value as insect destroyers is very great. Few birds equal them in this.

Among other resident birds that add a coloring to the white landscape of winter is the cardinal grosbeak. Unfortunately he is well known in cities, for such a striking bird with such a strong voice can not long escape the ravages of bird collectors. So only too frequently we hear his loud clear whistle from the veranda or open window of some city dweller. He and the blue jay make a pretty picture when seen against the snow covered trees or bushes. Considered as an economic factor in farm-life the grosbeak ranks high. His diet of insects, bugs and seeds is beneficial to both farmer and horticulturist.

In strong contrast to the joyful song of the cardinal is that of the mourning or, as we call it about here, the turtle-dove. Though more common in summer, it is a resident. The food consumed is grain, probably waste, weed-seeds, beech-nuts, acorns, with a great amount of insects and worms.

All hawks are under a ban in the general mind. Every farmer thinks he has done a good deed when he has shot one. This is true of some species, the sharp-shinned, Cooper's, and the goshawk. For though they destroy some enemies of the farmer, the harm they do to poultry and small birds makes their destruction advisable. But this is not true of some others such as the red-shouldered, red-tailed, broad-winged and sparrow hawk. It is true that in all species there are some rascals as well as rascals in human kind. And whenever one of these falls into the error of visiting the chicken-yard daily, it is the duty of the good-man of the house to shoot him. I can see no justification in the indiscriminate slaughter of the hawk as now carried on. Examination of stomachs has shown that the red-shouldered and red-tailed are highly beneficial. Two-hundred twenty stomachs showed that one and one-half per cent of the food eaten was poultry or small birds, sixty-five per cent consists of small rodents, while they and noxious insects amount to ninety per cent. These valuable birds deserve and should enjoy the protection of every farmer.

Perhaps in closing it may be well to say a word about owls. Since they are nocturnal, most people know very little about them. Probably the most common about here are the barred or hoot, and screech owls. Nearly every season a brood is raised in a certain part of our woods. Investigation shows that these two eat very little poultry or small birds. The great horned owl destroys more, but only a small part of its food is not injurious, or is at least neutral to the farmer.

Careful study and examination shows that the farmer has a host of friends in our common birds. They do not particularly work to help us any more than we do to help them. Each is involuntarily a help to the other.

WARREN HIGGINS.



FROM COL. CHI. ACAD. SCIENCES

60

BLACK AND WHITE CREEPING WARBLER.
(*Mniotilta varia*)
About Life-size.

COPYRIGHT 1900, BY A. W. MUMFORD CHICAGO.

THE BLACK AND WHITE CREEPER WARBLER.

(*Mniotilta varia.*)

After the spring migration is well under way and the few warblers that have appeared in the parks are tantalizing, elusive bits of color flitting from place to place that one has to follow and piece together as best he may sometimes, a new Warbler arrives and advertises his presence in plain black and white so distinctly that one can read it without running very hard or far. Moreover he does not flit restlessly from place to place, nor dart continually from his perch to capture his prey, as do most of the warblers, but creeps along the tree trunks, searching for insects in the bark, much after the fashion of a nuthatch. He can therefore be studied at leisure. Some time after he has appeared, the female arrives. She can be distinguished by her duller color, the dark parts of her dress being rather brownish than black. Although a rather small bird, four and one-half to five and one-half inches long, the contrasting black and white streaks make this bird a rather conspicuous object among the early open copses of the parks, before the leaves are out, and when these Creepers are abundant they give a distinct flavor to the two or three weeks they spend with us.

In the deeper forests these birds are

resident during the whole summer, and are the earliest of the warblers to arrive. While in the parks they are seen rather than heard, the reverse is true in the deeper and more remote woodlands, for here the bird uses his voice more, his song being a rapid succession of clear, two-syllable notes. He is here difficult to see, however, as the lights and shadows of corrugated bark harmonize well with his markings. No one knowing him only in the open parks would think of his colors as protective; no one acquainted with him in the deep forests would think of them for a moment as likely to attract attention; perhaps by doing his courting early, before the forests have gloomed their light with shadows, and going to housekeeping later, he works his color scheme both ways.

The nest, like those of many other of the wood warblers, is built on the ground, and is usually built in some place where it is likely to escape observation, as near the foot of a tree or bush, or under a stone or chunk. In this are laid, during May or June, five, or sometimes four, small, cream-colored, speckled eggs.

The birds return southward in August and September, but are then not so conspicuous, on account of the foliage.

H. WALTON CLARK.

CURIOUS ROCKS IN THE GARDEN OF THE GODS.

We went into The Garden of The Gods, through the western entrance, on the afternoon of a clear October day. According to old residents of Colorado Springs, we chose the best time and direction for seeing the wonders of that strange place. We were fortunate in securing an experienced guide who could point out to us many curious things which would otherwise have escaped our notice.

At the very entrance he called our attention to what is called "the baggage-room." Here the rocks, shaped much like gigantic trunks, are piled tier on tier; and it does not require a stretch of the imagination to see their resemblance to a well-filled baggage-room in some central railway station.

"Now," said our guide, "do you see that boulder lying up there on top of those trunks? If you will turn your heads to one side and look closely at it you will see that it resembles a head with well-marked features. Do you see it?" "Yes," we answered.

"Well," continued the guide, with a twinkle in his eye, "that is the baggage-man who lost his head while trying to arrange those Saratoga trunks."

An alligator, a seal, a shark, a camel, the head of a dog, all were pointed out in succession, plainly sculptured out of the rocks by the hand of Nature. On the other side of the driveway a huge toad of red rock reposed under great toadstools of the same formation. Japanese pagodas raised their many-storied towers into the air. The hanging rock leaned over the driveway, and we rode underneath its threatening bulk. Our driver said that nervous visitors often begged him not to drive under it "for fear that it might fall." The balanced rock has been too often photographed and described to need especial mention here. This rock will not always remain as a curiosity for sight-seers, as it has already been propped by thick applica-

tions of cement under one side. Some day it will topple over and crush the little photograph gallery which stands across the driveway from it. As the horses swept down the steep incline beyond the balanced rock our guide said:

"Cast your eyes over to that sentinel rock to your right. If you notice, you will see that it bears the plain profile of a man. That is Adam, the father of us all. Keep your eyes on it as we drive by, for on the opposite side are the features of Eve. Do you see it?"

Sure enough, the reverse side of the gigantic statue bore the face of a woman.

"And now, if you will turn your faces to the left, I will show you the most curious thing in the garden," said the guide. "Do you see those two tall rocks yonder standing entirely to themselves? Those two rocks are Punch and Judy. The one to the left you can easily see resembles a good-natured Dutchman, while the shorter one to the right looks like his wife. Now, Punch and Judy were a good old couple, but they had no children. One day a prophet told Punch that some day he would have a son who would grow to be half-a-head taller than his father. This amused the old man so much that he turned his head to one side and ran out his tongue as a sign of his incredulity. See it?"

Yes, we could plainly see the strong profile of the old man, and from his open mouth protruded his tongue. We laughed heartily, and the guide continued.

"Keep looking. We are not done yet."

The horses were walking slowly along, so that our point of view was constantly changing.

"After a time a child was born to this worthy couple. You now see that Punch has faced about, from left to right, and is gazing in open-mouthed astonishment on his son—the rock which now appears between Punch and Judy."

Sure enough, a third and smaller rock arose from between the two rocks which until that moment had appeared to be at a long distance from all others. This was the prophesied "son."

"That is not all yet," said the guide, as we expressed our wonder. "As years passed on the boy grew until, finally, he did exceed his father's height by half-a-head. The old man has been so overcome by amazement that his jaw has dropped; and his wonder passing into dismay his teeth have fallen from his open mouth. Do you see the empty gums protruding from beneath the shriveled lips?"

It was, indeed, true. The strange story was as complete as the optical illusion was perfect. We had seen the third person, "grow" to gigantic manhood out of what, at first point of view, was empty space, and had seen the strange changes of expression on the stony face of his father. This is surely the most curious group in this garden of wonders.

Soon after we passed this point the "Queen of the Garden" was pointed out, far to our right. It was the statue of a woman in flowing white robes, and her unbound auburn hair fell far below her waist. At the distance from which we viewed it, the resemblance was perfect. The statue is a formation of the snow-white gypsum rock, while the hair is the red rock—in color like red clay—of which almost all the rocks in the garden are composed. Not far from the Queen was a "heroic-sized statue of Washington standing in a triumphal chariot. Straight before us appeared the massive cliffs that form the eastern entrance to the garden, which have been so frequently pictured. The top of the rock to the left, as we approached it, has been worn by the elements until the heads of "the kissing camels" have been plainly formed. The profile of an Indian chief appears on the right-hand cliff.

The "Cathedral Spires" were passed, the echo of the garden tested, and then we circled about to the spot which our guide claimed used to be the dancing ground of the Indians. It is a beautiful spot, worthy of a better use than as a place of festivity for the aborigines. A hole, shaped like a door with a pointed

arch, was pointed out to us as the entrance to a cave which runs back into the rock some seventy-five feet, and which was used by the Indians for a stronghold. Half a dozen men entrenched there could hold a thousand at bay.

We next passed through the eastern "entrance," and, turning about, looked back at the massive portal, and through it to the beautiful garden with its background of pine-clad hills and snow-capped mountains. This portal is formed of the red rock, while only a few rods outside of it rises an immense cliff of white gypsum. The two distinct formations make a striking contrast and show what a mighty upheaval the earth's strata must have passed through in bygone ages.

In the side of the gypsum cliff is the entrance to another cave in which the Indians are said to have kept their white prisoners. Whether this be true or not, the rocks are worn smooth, as if by much creeping in and out. It would certainly form a secure dungeon, and escape would be hopeless.

The final wonder of the garden was now pointed out to us as we sat "faced about" outside of the eastern portal. Far above us, on the top of the left-hand cliff, was "the stage-coach" with its prancing horses, its driver on the box, and its two footmen on the rear. It was so plainly formed that we were quickly able to point it out ourselves.

The return drive through the garden, though more rapid, was quite as interesting, as we looked about to recognize the objects that had previously been pointed out.

The sun had gone down behind the snowy head of Pike's Peak, and the blue haze had settled down over the pine-clad summit and sides of Cameron's Cone. The cool, bracing air was odorous with the breath of pines. The charm of nature untouched by the hand of man encircled us. As we bade goodbye to the Queen of the Garden, to Washington, to Punch and Judy and their interesting son, to Adam and Eve, we murmured: "We will come again. We surely will come again."

MARY MCCRAE CULTER.

THE GOLDEN ORIOLE.

(*Icterus gularis gularis*.)

If we desire to study the fifty or more species and varieties of orioles we must travel to the tropics for but few of these usually richly colored birds fly as far north as even the southern border of the United States. Their colors are "sharply contrasted areas of black and orange, black and yellow, or black and chestnut; never entirely black." The females, of nearly all the species, and the young are more plainly colored, shades of olive-greenish prevailing.

The Golden Oriole of our illustration, also called the Gular and Lichtenstein's Oriole, has apparently only a very limited range, being found in southwestern Mexico and southward through Central America to the northern part of South America.

An observer of this species states that it searches for food in a manner very similar to that of the Baltimore oriole and while swinging from the smaller branches of a tree, head downward, it will look for insects upon the undersides of the limbs. He also states that it has a soft, flute-like note which to him sounded somewhat like the word *whae*.

The genus *Icterus* is one of the most difficult of the genera of birds in which

to satisfactorily separate and classify the species. As a result, some of the species contain many varieties. There is another oriole which very closely resembles the one we have illustrated, and it is considered a variety of the same species being named *Icterus gularis tamaulipensis*. It is the Alta Mira oriole and is found in eastern Mexico, and it has possibly been seen in Louisiana, though Mr. Ridgway considers it doubtful. This oriole is much smaller and its colors are more intense than are those of the Gular or Golden Oriole of our picture. The orange color is usually a very rich cadmium orange and the bill is shorter and deeper through the base. This variety is said to have frequented the rice fields and fig trees in southern Louisiana. So perfectly did the description of these Louisiana specimens agree with the characteristics of the Gular Oriole that at least one authority has given the habitat of the latter species as including Louisiana.

However, it matters little whether this Oriole passes into the United States or not. It is a bird of tropical regions, where its brilliant plumage is greatly enhanced by the wonderful greens of the tropical foliage.

THERE IS A SPIRIT IN THE WOODS.

A pattering down from branch to bough
Of acorn spilled from chiseled urn;
A sudden rustle then and now
As hanging dead leaves sway and turn;
A ghostly chatter from the oak;
An unsprung twig in yon thick bush;
A distant mocking, omened croak:—
And then the forest's solemn hush.

* * * * *

As walk we here in sentient moods
We feel a Spirit in the Woods.

—CHARLES ELMER JENNEY.



GOLDEN ORIOLE.
(*Icterus gularis gularis*).
Life-size.

COPYRIGHT 1908, BY A. W. MUMFORD, CHICAGO.

THE AUNT JANE STORIES.

IX. SOME CURIOUS ANIMALS.

PART I.

The family at Woodland was in a state of excitement. Sixty young, spring chickens had been killed in one night, although housed in a room where it was thought not even a good-sized rat could enter.

Howard and John made a thorough examination of the chicken-house and at last discovered one small hole. They ran to the house to tell Aunt Jane that she must relinquish her theory that a Weasel had caused the trouble, as it would be impossible for a Weasel to enter through so small a hole. But Aunt Jane continued to insist that, as the blood of the chickens had been sucked, and the chickens' flesh unharmed, a Weasel was certainly the murderer, and she fortified her argument with the remark: "You know, boys, a Weasel can go through a hole smaller than itself."

"Smaller than itself!" cried the boys in astonishment, "we don't know any such thing."

"It can. It contracts its body as it passes through."

"Well," exclaimed Howard, "that is a curious fact in natural history. I mean to ask the farmers about it, and I'll warrant they don't know it."

Sure enough, Howard questioned every one he met regarding Weasels. He reported at night that out of ten people he interrogated, only one knew that it was possible for a Weasel to go through a hole smaller than its own body.

"Aunty," the children entreated, "do tell us about other curious animals. We are interested in the exploits of Madam Weasel and her family, although she has been so naughty as to deprive us of many nice broils and fries for breakfast."

"Begin with A," Howard suggested. "That will help you to recall the names. A stands for——"

"Ai," laughed Aunt Jane.

"Do you know the creature?"

"Not by that name. Has it no other?"

"Yes—it is the three-toed Sloth. It is called 'Ai' from the low, plaintive cry it utters, which is thought to sound like 'Ai.' The name 'Sloth' is a misnomer, for, while it is true that the animal's movements are slow and awkward upon the ground, yet, when it is in its native place, clinging back downward to the branches of trees, its curious limbs—the fore legs so much longer than the hind ones and furnished with talons—stand it in good stead. The Sloth can reach far out and draw toward him the twigs on which he feeds, and he can hold on to the boughs and move about the tree with sufficient speed. He is really the best climber among the mammals."

"Animals are like people," said Edith, "in the right place they prosper, but in the wrong place they seem awkward and imperfect."

"True," replied Aunt Jane, "Naturalists for a long time thought the Sloth a very imperfect creature; but when its true environment was discovered, it seemed well adapted to it. The Sloth is out of place on the ground, and does not need to descend to it even for water; it is therefore also remarkable, as the animal that does not drink, but takes its moisture from its food."

"Good," cried Madge, clapping her hands. "Now I'll surprise the girls at school with the question, 'What animal never drinks?' They will all say there is not one."

"Without pausing to consider the social, observant Agouti, or the Armadillo, with his curious armor; the beautiful Ariel, or the strange-voiced Aye-Aye, and other queer creatures under 'A,' we will pass on to B, where the Bat, especially the Vampire Bat, occurs to me as a singular animal."

"Animal! you're off the track now, Aunt Jane," cried Madge; "a Bat is a bird. It flies about."

"No, my dear, the Bat is a winged quadruped, and is therefore somewhat unusual. Although there are others, such as the Flying Squirrel and Lemur. The delicate membrane which stretches around the Bat is used in the place of the wings with which birds are furnished, and is a more perfect flying apparatus. The Bat has a very long middle-finger, and a short thumb with a claw, which it uses in attaching itself to anything. The Vampire Bat has its name Vampire from its habit of sucking the blood of other animals, and sometimes even of men. In doing this it uses its needle-shaped teeth, but causes the victim no pain, as it draws the blood. The poet says——"

"Ugh! the horrid creatures!" The girls shuddered. "Surely the poets do not write about Bats—such disagreeable creatures."

"Yes, Bats which have something of beasts and bird appear in poetry. Goldsmith says:

'Silent bats in drowsy clusters cling.'

"How true to nature the poet's statement! You know Bats do suspend themselves, head downward, during the day, in some obscure place agreeable to them."

"Do go on to 'C,'" the girls entreated, while the boys begged for some blood-curdling stories of Vampire Bats; but, as the girls were greater in numbers and insisted that they did not want their blood extracted by Bats, or curdled by stories about them, Aunt Jane proceeded to consider "C."

"There are many interesting creatures under this head," Aunt Jane continued. "There is the 'Coati,' with so singular a foot that it is said if the creature were entirely destroyed, except a single paw, the usual tubercles upon it would serve to identify the animal. Then, there is the 'Charti,' who daintily picks the feathers from his poultry before he eats it. The 'Colugo,' with its limbs and tail connected by a membrane, which enables it to leap or fly a hundred yards from one limb or tree to another. The crafty 'Chetah,' which Asiatics use as a quadruped falcon to hunt game, and the 'Chevrotain,' the smallest of all the

cloven-footed animals, a cousin of the deer, but having no horns. But, at this rate, we shall not soon make an end of 'C,' so we will take the handsome 'Civet' as our representative."

"It is a cat, is it not?" said Alice.

"Wood says it is wrongly styled Civet-cat."

"Is it a native of America?" Howard inquired.

"No, it is found chiefly in Abyssinia."

"Why do you distinguish it as handsome? I fancy that little 'Ariel' you passed by in 'A' is a pretty creature," said Alice.

"Indeed it is. In shape, the Civet is not especially beautiful, as it is so thin it has the appearance of being flattened between two boards; but it is covered with striking looking black and white fur, and has long, white whiskers. Its eyes are large, and at night glow like emeralds."

"Is it valuable in any way?" questioned John.

"Yes, it is so valuable that it is seldom killed, but is kept in perpetual captivity."

"Poor little Civet," said Madge. "Why is it kept a prisoner?"

"On account of the perfume it yields. Under the abdomen there is a double pouch filled with a honey-like substance, which has an odor resembling musk. The Civet is too valuable to be killed as this odoriferous substance is of great commercial value."

"The most peculiar specimen of the deer family is also distinguished by a perfume pouch," Aunt Jane continued. "The Musk Deer feeds upon kastoree, a bulb which imparts its peculiar perfume to the odorous secretions of the male deer."

"How does a Deer get at a bulb?" Howard inquired.

"Does he dig with his horns?"

"No; for unlike other deer, he has no horns, but he is provided with long, pointed, sharp-edged tusks, as digging instruments. A fleet animal is the 'Dziggetai,' the wild ass of India and Persia. It runs with such rapidity that it is impossible to be overtaken by any animal without wings. It is shy and wary, as well as fleet, and the troop obey their leader absolutely, and, in this respect, furnish an example of obedience which it would be well for you children to imitate."

"An Arabian horse, a true bred Arabian, would certainly be a match in swiftness for the Dziggetai," objected John. "I thought an Arab horse could overtake anything without wings."

"This fleetest of animals bids defiance to the boasted Arabian horse, provided the chase is confined to its usual haunts on hilly or rocky ground."

"What noble game it must be," said John. "Dear me! I'm so afraid I'll never see half the wonderful things there are in the world, not even if I go to all the shows and travel as much as I expect to do."

"We can hear about some of them any way, if you will only keep still, John, and let Auntie go on," said Howard, impatiently.

"You are familiar with the Elk, Elephant, Ermine and other animals under 'E'; but the Eland may be mentioned as being quite different from the swift animal we have been considering. It is so slow that hunters simply drive it up to their encampment to be killed. Its flesh has the peculiarity of being tender enough for immediate use. The creature is remarkable for the length of time it can exist without drinking; it is said for several months even, when its food is dry."

"How kind God was to make the desert animals not to care for water," said little Madge.

Aunt Jane smiled approval of Madge's reflection and replied: "His tender care is over all his works. You may never have heard of the Fennec," she continued. "It is a native of Africa, a pretty little fawn-colored creature, remarkable for such a look of gravity as to make it really comic to the beholder. Although it is carnivorous, it is very fond of dates, and can climb the lofty, branchless trunk of the date palm to secure for itself the luxurious fruit which grows in clusters at the very top."

"Is it not unusual for that kind of an animal to climb trees?" Edith inquired.

"Indeed it is. I selected the Fennec to stand for 'F' on that account," was the reply. "As you all saw a Gnu at the Zoological Gardens, I need not describe this curious 'wilde-beest,' as the Dutch

call it. The Gerboa is chiefly remarkable for the long distances it can jump, balancing itself while shooting through the air with its long tail. I wonder if you are acquainted with the Glutton?"

"Yes," shouted the girls. "There he is, and his name is John!"

"I don't eat any more than the rest of you," protested the accused, "except in the case of strawberries and ice-cream."

"The Glutton is a cunning creature. It is said that it will throw moss in the way of a deer, and when it stops to eat, it will spring upon the deer and devour it. It is fortunate for the other animals that the Glutton moves very slowly; if it were active many would be destroyed. It eats a long time, and consumes a large quantity of food. The Kamtschadales say that the angels wear garments made of the glossy fur of this animal. Hooker complains that it damages the fur trade by eating the meat which baits the traps set for the Martens, but he says nothing of its fur."

"Tell us about the Hedge-hog next," said Howard. "Do you think Nature has provided it with such curious quills as a protection against attacks from enemies?"

"No doubt its thorn-spiked armor is a great defense, but it also protects the Hedge-hog when it falls or throws itself from a great height. As it descends it curls up into a ball, and as the quills are elastic, it jumps up unhurt, after falling twelve or fourteen feet."

"I envy the Hedge-hog such a coat," exclaimed John.

"Now, wouldn't you look pretty in quills?" cried the girls.

"Before I order such a coat I'll arrange with Mother Nature so that it can be removed at pleasure," John laughingly replied.

As John ceased speaking, the clock slowly struck nine.

"What, bedtime already?" exclaimed Edith, "We are not nearly through our alphabet."

"Tomorrow will soon be here and we can then complete our list," consolingly replied Aunt Jane, as the children reluctantly bade her good night.

BELLE PAXSON DRURY.

TO THE MAIDEN-HAIR FERN.

No blossomed hues and perfumed breath conspire
To win thee favor in the sight of man.
Thy race in ancient lineage began
Ere sunset golds and morning's ruddy fire
Were caught in chalices; or hearts desire
In incense floated from the censer's pan;
Or nectars from their secret fountains ran
To pamper love or suage insensate ire.

Thine is the simple grace of perfect form;
Veiling beneath thy lightly penciled shape
The dainty spirit of a primal art,
(Thou fairest child of nature's early morn)
As though some saintly maiden should escape
And dwell in convent solitudes apart.

—ROLAND E. CONKLIN.

AIR PLANTS.

Among the most interesting of the foreign plants exhibited in city conservatories are the air plants, one or more of which every conservatory possesses. The bark on which the air plant is growing is cut from the tree in a large square so that the plant remains uninjured. It can then be suspended by a wire from the ceiling of the conservatory, or attached to a growing tree. Many persons, at first sight, would mistake air plants for parasites, since both adhere to growing trees in much the same way. But the difference between the two is distinct and lies in the mode of obtaining nourishment. Air plants, or *epiphytes*, gather food from the air, their aerial roots, with which they are provided in quantity, serving both as means of attachment and as organs of absorption. Parasites, on the other hand, derive their sustenance from the body to which they are attached,—their hosts.

One of the most usual of air plants exhibited is the Stag-horn Fern, *Platyce-*

rium alcinome, which takes its name from the fact that its broad-formed leaves resemble horns—the name *Platyterium* meaning in the Greek, broad horns. This plant is widespread in its distribution, being found not only in Australia and Africa, but occasionally in the southern states of our own country, in Florida and in Georgia.

Epiphytes, aside from the ferns, usually belong to the orchid family or to the *Bromeliaceae*, a family of which pineapples are members. Among the orchids, epiphytes are beautiful and varied, especially in far-away countries. In the United States they are represented by a single wild species, *Epidendrum conopseum*, which clings to the trunks of magnolia trees in South Carolina. In our finest conservatories many of the rare species of orchid epiphytes are displayed. The long, black moss *Tillandsia*, which hangs from the trees in Florida is epiphytic, and represents the *Bromeliaceae* in this country.

MARY LEE VAN HOOK.



SKYLARK.

THE SKYLARK.

(*Alauda arvensis.*)

The Laverock sings a bonnie lay above the Scottish heather;
It sprinkles down from far away like light and love together;
He drops the golden notes to greet his brooding mate, his dearie;
I only know one song more sweet,—the vespers of the veery.

—HENRY VAN DYKE, "The Veery."

The Skylark is most truthfully *the* bird of the people in European countries. It is loved for its songs, its liveliness, its harmless habits, and, because it inhabits those regions cultivated by man and lives in contentment with him. It cares not for the bleak wastes, but let man turn "the furrow on the waste, and replace the heath, the moss, and the rush, by a more kindly vegetation, then the Lark is sure to come with its song of gratitude, to *reveillie* him to the field betimes, and cheer his labours the live-long day."

The Skylark, too, is *par excellence* the bird of the poets and of many writers of prose. Poets of every grade and merit have found inspiration in its song. No bird has appeared more often in literature, especially that of the Old World; and some of the passages of which the Skylark is the theme, are classics which will endure to the end of time. He who can listen to its lithesome song and not be enraptured with the wonderful compass and freedom of the melody, is indeed dumb and emotionless. The Skylark inspired Wordsworth to write:

Up with me! up with me into the clouds!

For thy song, Lark, is strong;

Up with me, up with me into the clouds!

Singing, singing.

With clouds and sky about thee ringing,

Lift me, guide me till I find

That spot which seems so to thy mind!

These lines from Wordsworth's poem call to mind the habits of the Skylark when it gives utterance to its wonderful song. It is the song of the male. "Its type is the grass, where the bird makes its home, abounding, multitudinous, the notes nearly all alike and all in the same key, but rapid, swarming, prodigal, showering down as thick and fast as drops of rain in a summer shower."

Mr. Henry Seebohm gives the following excellent account of the habits of the Skylark during the breeding season. He says: "At this season of the year the Skylark's song is particularly loud and charming. A few birds will often be tempted to sing by an unusually mild day in winter, but the song is seldom fully resumed before March. The manner in which the Skylark sings, in the full view of all observers, is probably the secret of the bird's popularity. Who has not seen this somber little bird rise from the meadow grass or the heath, and has not watched its soaring flight as upward and upward it goes until it appears but a speck or is entirely lost in the sky? He bounds up from the cover on fluttering wings and with outstretched tail, rising a little way in silence, then, bursting into song, he pursues his upward course. At first the wings are beaten very rapidly, in a fluttering way; but when the bird gets higher the movements are more regular. Sometimes it rises directly upward, but very often goes far away from the place of its first ascent, sailing over the fields, but in an ever-rising course. When the zenith of its flight is reached it will sometimes fly about for a short time, singing; but more usually it comes down again directly. The song is continued until the ground is neared, when the bird usually drops like a stone, or flutters off over the grass ere seeking cover. These aerial movements are not essential to the bird's song; it will sing quite as sweetly when perched on a clod of earth or on the ground, and it often warbles a few notes when running about amongst the grass or over the fallows. The height of the song flights also varies considerably. Sometimes the bird may be seen fluttering at a moderate height, singing

very sweetly, and remaining in the air for some considerable time; and it will occasionally sit and sing on a small bush or a wall." Mr. Seeböhm also says: "He pours forth his song so industriously, so continuously, and arranges his notes so harmoniously that the song of few birds are listened to with more pleasure. The song of the Skylark is pre-eminently cheerful; and if the monotony and continuousness of the music reminds you of that of the bagpipe, it has at least no melancholy in its tone."

Again the words of Wordsworth regarding the song of the Skylark seem most appropriate:

There is madness about thee, and joy divine
In that song of thine;
Lift me, guide me high and high
To thy banqueting-place in the sky.

The Skylark is not a particularly shy bird. It roosts upon the ground and very rarely, if ever, perches in trees. Its flight is straight, quick and powerful, and it runs upon the ground with perfect ease. It delights in dusting itself and may often be seen in dusty roads or in bare sandy places in fields, lying on its side and thoroughly dusting its plumage after the manner of the domestic fowls. Its call note has been described as a "liquid, musical, double note, somewhat resembling the sound made by a whistle half full of water." It is so peculiar that it cannot be expressed in syllables.

While the Skylark is a native of Europe and portions of Asia and Africa, we may also claim this popular bird as a part of our avi-fauna, for it is a casual visitor in Greenland and it is also occasionally seen in the Bermuda islands. Efforts to introduce the Skylark into the United States have been made. While most of these efforts have been total failures, some were apparently successful for

a time. In the years 1887 and 1888 the Skylarks seemed quite well established and nested on Long Island, New York. In March of the latter year, however, a severe blizzard occurred which apparently destroyed the entire colony as none of the birds were seen for several years. In the year 1895, however, a singing bird and a nest were observed in the month of July.

The nest of the Skylark is a very simple structure. It is always placed upon the ground and is made of dried hay, grass and moss and lined with finer grass, fine rootlets and often a few hairs. It is built in a slight depression, which may be scratched out by the bird, and under the protecting shadows of a tuft of herbage or a clod of earth. More frequently the nests are placed in corn fields or in the grass of meadows but they are sometimes built in weedy pastures. Skylarks are easily caught and readily tamed. They seem to thrive in captivity and sing just as sweetly as when "soaring in boundless freedom high up amongst the clouds."

We cannot close this article without again referring to the beautiful song of this pastoral bird of which Shakespeare has said so much in the one simple line, Hark! hark! the Lark at heaven's gate sings, and of which Shelley wrote, in beautiful verses, after having heard the Skylark's carolling. We quote the opening stanzas:

Hail to thee, blithe Spirit!
Bird thou never wert,
That from Heaven, or near it,
Pourest thy full heart
In profuse strains of unpremeditated art.
Higher still and higher
From the earth thou springest
Like a cloud of fire,
The blue deep thou wingest,
And singing still dost soar, and soaring ever
singest.

AN AUTUMNAL DAY-DREAM.

"Bob-white!" and "bob-white!" in a major key—then after an interval, an answering "bob-white!" in the minor. It is hard to be altogether self-satisfied when we hear that clear whistle. It savors so of the autumn sportsman, breaking the happy coveys to evince his marksmanship and tickle his barbarian palate.

Indian summer!—how, at any other season, we love to ponder over those dreamy, misty, mellow days! In ravishing languor one may once more recline on the prostrate leaves and look over the rich autumnal landscapes! Despite this yearning for the impossible, Nature never allows herself to become monotonous: wearied by winters immaculate, the eye loves to dwell on the gay light greens of spring; wearied of these, the somberness of summer is readily acceptable; when this has held its long sway, nothing could be better appreciated than autumn's blaze of color.

Which color predominates, red, yellow, brown, or blue? It is difficult to decide; the oaks and beeches and many other trees are brown; the tulips and maples, golden yellow; the shrub-like sumacs, with their intense scarlet, set all the roadsides ablaze, while the Virginia creeper leaves its bloody trail in the woods; in the fields and wood-borders the purplish-blue of the asters and gentians strive for dominion over the yellow of banked sunflowers and massed golden-rod.

The harmonious whole of these, with the balmy air, and the intense cool blue of the sky, and the comparative silence of Nature, creates an irresistible desire that we cannot withstand, to remain and surrender ourselves to the witchery of the hour. How soon will all this be changed!

"The next that sweeps from the north" tears the loose, sear leaves from the branches and carpets the ground. Brilliant colors fade to browns and neutral tints. Finally, a fitful breeze whirls down the road, accompanied by a regiment of noisy leaves, halts, wheels, and colliding with the clattering crowd, whirls them round and round with ever-increasing force until they ascend spirally. This gyration over, they fall rapidly and are at rest—for the time being—many feet from where they started. They are helpless creatures of circumstance, and these October winds show no mercy.

Some of our trees are almost bare. But many leaves retain their grip as if reluctant to leave the sharer of their joys and sorrows, and face the unknown world. They are contented to rest beside some thankful Christmas fern, but are frightened at the chance of a half-mile undignified clatter along the dry road, terminating in a trampling-out of existence. Who says the leaves have no life?

Our thoughts pass on. The trees are bare, and the noisy—not merry—crackling of leaves trampled under foot disturbs the solitude of the deserted wood. The first snow of the year is falling—great, soft flakes that leave no impression on the warm earth and are seen only in their passage through the air. They fall thicker and faster until a cold November wind suddenly rushes through the trees and drives the flurry aslant, wrathful that the earth should thus receive her flaky heralds.

"Bob-white!" the clear, bold whistle whose source is so mysterious, breaks in upon these unpleasant thoughts. Philosophically, we resolve to enjoy these superb days, regardless of those that will follow.

NORMAN O. FOERSTER.

THE CATBIRD.

(*Galeoscoptes carolinensis*.)

Few birds are better known and, perhaps, few are less understood. The Catbird is an erratic individual, presenting certain characteristics one moment and the very opposite the next moment. Few birds have been more greatly admired; none have been more greatly disliked and abused. The Catbird has been called the "Dr. Jekyll and Mr. Hyde of birds." One moment it is quietly preening its feathers, for it is a particular bird; then, without warning, it launches into the air in the most savage manner with feathers ruffled and shrieking its unpleasant cat-calls. In spite of all its unpleasant characteristics, the Catbird is an intelligent bird and enjoys the friendship of man. If encouraged by kind treatment it becomes very friendly and quite tame. It will willingly nest near our homes if not persecuted, and it will become a delightful bird companion. Withal, the Catbird is a charming and useful bird and should be known and protected by many people, for its range is extensive. It frequents the orchards, the woods, the pastures and the gardens of North America from the southern portions of the British Possessions southward. It winters in the southern states, Central America and Cuba. While it is found in the Rocky Mountains, it is only a casual visitor to the Pacific coast.

In the west the Catbird is common from the plains up to an altitude of nearly 8,000 feet. While this mountain form resembles its eastern relative in nearly all of its habits and characteristics, it is a

"shy, almost silent bird, that sedulously hides itself from view in the thickest shrubbery." The cat-like calls, so well known in the east, are seldom uttered by the quiet bird of the mountains, and it seems rarely to attempt a song.

The male sings not only during the mating season, but quite throughout the summer. While the Catbird's song is not loud it is very melodious and pleasing. Though its powers of mimicry are limited, its voice is versatile. "Many are the utterances he makes, ranging from his mewling call among the hedges to his ecstatic love song from the top of a neighboring tree."

The inartistic and bulky nest of the Catbird consists of loosely woven twigs, sticks, dry leaves, fibrous bark and grass. The nest usually is deep and lined with fine grasses and hair. Not infrequently the bird will use twine and rags in the construction of the nest. The Catbird mother is a most devoted bird and when her nest is discovered, "she exhibits so much distress that one sympathetic to bird griefs has no heart to pursue investigations."

It seems strange that there should be so much antipathy to these plain sweet-voiced but erratic birds. Though their cat-calls may seem harsh, and during the season of ripening they may partake quite largely of our smaller cultivated fruits, we should remember that while they partake of some fruit they are also eating many insects which also forms their chief diet during the remainder of the year.

THE CATBIRD.

Not always arias are best
From birds in gayest plumage drest
—Henry Nason Kinney.

The songs that are harbored in the Catbird's leaden breast, are as apples of gold in pictures of heavily oxydized silver, and his zeal in scattering the fruits of the harvest garnered in many a vocal

field leads to the supposition that the dark grey, tailor-made lady of his choice may soliloquize upon the lines, "Comfort me with apples, for I am sick of love."

If the skylark is nearest to heaven, the



Catbird is, conversely, nearest to man, building his home in the low bushes within easy range of his inspection and supervision; accomplishing his spring "flitting,"—when such a cataclasm is rendered necessary through human or feline interference—in fond imitation, some believe, of a familiar human spectacle, by carrying the half-dressed progeny pick-a-back; singing to man and posing to him as none other does; and if sometimes his audience "gapes for wonderment," as did the one Samuel Coleridge observed,

When the long-breathed singer's uptrilled
strain
Bursts in a squall,—

it is because he shares the human belief in the virtue of occasional discord to enhance the value and effect of harmonious passages.

If not entirely an original composer, he gives so elegant and studied a turn to his variations upon the themes of other masters, as to establish himself as the avian exemplification of William Rossetti's "Emerson,"—that he is "not essentially a poet, as he is a Druid that wanders among the bards, and strikes the harp with more than bardic stress,"—

"And gushing then such a melody
As harp-strings make when a sprite goes by."

Mr. Chapman thinks it unfortunate that the Catbird's name should have originated in his call-note, which to him is one of the most disagreeable sounds in nature; and Audubon, saying that "the vulgar name which this species bears has probably rendered it more conspicuous than it would otherwise be," adds, that "the name has also served to bring it into some degree of contempt with persons not the best judges of the benefits it confers upon the husbandman."

As between those who laud his studied eloquence, and those who deride his unlovely call and unassuming vesture, he who would cull amid the flowers of speech of ornithological biographers must, in the case of this accomplished polyglot more than of any other of the avian hordes, preface his accumulated researches with Dido's philosophical dictum, "*Tros Tyriusque mihi nullo discrimine agetur.*" For while there are many who would confer upon him the

title earned by his cultured and intricate recital, as Primo Tenore in the feathered opera, to others he is as the clown whose sober garb is but an enhancement to his oddity, to emphasize his "gay buffooneries."

Miss Florence A. Merriam found him, "the most interesting and most exasperating of birds." * * * "High trees have an unsocial aspect, and so as Lowell says, 'The Catbird croons in the lilac bush.' Like some people, he seems to give up his time to the pleasure of hearing himself talk. A first cousin of the mockingbird,—whom he resembles in person much more than in voice,—perhaps the relationship accounts for his overweening confidence in his vocal powers. As a matter of fact, his jerky utterance is so harsh that it has been aptly termed asthmatic.

"The Catbird is unmistakably a Bohemian. He is exquisitely formed, and has a beautiful slate-grey coat, set off by his black head and tail. By nature he is peculiarly graceful, and when he chooses can pass for the most polished of the Philistine aristocracy. But he cares nothing for all this. With lazy self-indulgence he sits by the hour with relaxed muscles and listless, drooping wings and tail. If he were a man, you feel confident that he would sit in his shirt sleeves at home, and go on the street without a collar.

"And his occupation? His cousin is an artist, but he is a wag as well as caricaturist, or is he in sober earnest when he tries to imitate the inimitable Wilson's thrush? If a wag, he is a success, for he deceives the unguarded into believing him a robin, a cat, and a 'bird new to science.' How he must chuckle over the enthusiasm which hails his various notes, and the bewilderment and chagrin that come to the diligent observer who finally catches a glimpse of the garrulous mimic."

Dr. Coues accounts for the "vulgar prejudice against this bird," by the hypothesis that the Catbird is thoroughly commonplace. "There is a dead level of bird life," he says, "as there is of humanity; and mediocrity is simply despicable—hopeless and helpless, and never more so than when it indulges aspirations. Yet it wears well and is a useful thing; there

must be a standard of measure, and a foil is often extremely convenient. The Catbird has certainly a good deal to contend with. His name has a flippant sound, without agreeable suggestiveness. His voice is vehement without strength, unpleasant in its explosive quality. His dress is positively ridiculous—who could hope to rise in life wearing a pepper-and-salt jacket, a black velvet skull-cap, and a large red patch on the seat of his pantaloons?"

Still, the trim, well-fitting out-door costume is eminently gentlemanly, and the gay patch made visible by his departure was applied for the obvious purpose of conveying to his persecutors a symbolical reminder and warning of how blessings brighten as they take their flight; for when he has been driven out of life, his good deeds will live after him, and that he was useful in inverse proportion to his lack of ornamentation will be recognized, when too late; for it is misfortunes rather than sins that find the Catbird out.

Audubon says of the song of the Catbird, "It is composed of many of the gentler trills and sweeter modulations of our various woodland choristers, delivered with apparent caution, and with all the attention and caution necessary to enable the performer to please the ear of his mate. Each cadence passes on without faltering; and if you are acquainted with the song of the birds he so sweetly imitates, you are sure to recognize the manner of the different species. When the warmth of his loving bosom engages him to make choice of the notes of our best songsters, he brings forth sounds as mellow and powerful as those of the thrasher and mockingbird. These medleys, heard in the calm and balmy hours of retiring day, always seem to possess double power, and he must have a dull ear indeed, and little relish for the simple melodies of nature, who can listen to them without delight."

Mr. Chapman thinks from a musical standpoint, his song is excelled by few of our birds. "His voice is full and rich, his execution and phrasing faultless, but the effect of his song, sweet and varied as it is, is marred by the singer's too evident consciousness."

Mrs. Olive Thorne Miller believes the song of the Catbird is rarely appreciated,

probably because he seldom gives a "stage performance," but sings as he goes about his work. "In any momentary pause a few liquid notes bubble out; on his way for food, a convenient fence-post is a temptation to stop a moment and utter a snatch of song. His manner is of itself a charm, but there is really a wonderful variety in his strains. He has not, perhaps, so fine an organ as his celebrated relative, the thrasher; he cannot, or at least he does not, usually produce so clear and ringing a tone. Nor is his method the same; he does not so often repeat himself, but varies as he sings, so that his aria is full of surprises and unexpected turns. Doubtless persons expert at finding imitations of other birds' notes would discover some in his, but I am a little sceptical on the subject of conscious 'mocking.' When the Catbird sings, I hear only the Catbird, and in the same way I take pleasure in the song of the thrasher or mockingbird, nor care whether any other may have hit upon his exact combinations." She tells of his wonderful "whisper song, an ecstatic performance which should disarm the most prejudiced of his detractors." She continues: "Occasionally his mate, as I supposed, uttered warning cries, and in deference to her feelings, as it appeared, his notes dropped lower and lower, till I could scarcely hear them, though he was not ten feet away."

Baird, Brewer and Ridgway are unanimous with Mrs. Miller in her opinion of the charm of the song, but vote with the majority on the question of his power of mimicry, which, they say, though limited and imperfectly exercised, is frequently very amusing. The more difficult notes it rarely attempts to copy, and signally fails whenever it does so; but they say, "From its first appearance among us, almost to the time of departure in early fall, the air is vocal with the quaint but attractive melody, rendered all the more interesting from the natural song being blended often with notes imperfectly mimicked from the songs of other birds. The song, whether natural or imitative, is always varied, attractive and beautiful." They mention that the male bird will frequently apparently delight to sing in the immediate presence of man, a statement which almost any member of the family will take

pleasure in proving by the repeated rendition, with an eye on his audience, of his most finished and scintillating selections.

Mr. Cheney says the Catbird has not a strong voice, nor, really, a tune of his own. "With something the style of the brown thrush, he is not his equal in song. Generally considered a mocking-bird, he does make use of the notes of different birds, delivering them in snatchy, disconnected fashion, and his performance on the whole, is very interesting, given as it is, in a lively manner, with an occasional tone truly sweet and musical. Much of his singing, however, is mere twitter, often little more than a succession of squeaks, too antic to be put on paper." Mr. Cheney's practiced ear detected in the Catbird song the notes of the red-eyed vireo, the brown thrasher, the bluebird, the robin and the yellow-breasted chat.

W. A. Stearns opined with enthusiasm that "Next to the thrasher and the mocking bird, 'prince of song,' the palm must be awarded to this humble tenant of the shrubbery for power of mimicry and range of vocalization, as well as for sweetness of execution in singing."

In Alexander Wilson's judgment, though we cannot class him with the grand leaders of our vernal choristers, he well merits a place among the most agreeable *general* performers. He says: "The Catbird is one of our earliest morning songsters, beginning generally before break of day, and hovering from bush to bush, with great sprightliness, when there is scarce light enough to distinguish him. His notes are more remarkable for singularity than for melody. They consist of short imitations of other birds, and other sounds; but his pipe being rather deficient in clearness and strength of tone, his imitations fail where these are requisite. Yet he is not easily discouraged, but seems to study certain passages with great perseverance, uttering them at first low, and as he succeeds, higher and more free; no ways embarrassed by the presence of a spectator even within a few yards of him. On attentively listening for some time to him one can perceive considerable variety in his performance, in which he seems to introduce all the odd sounds and quaint passages he has been able to collect."

Nuttall, like all of *Galeoscoptes carolinensis*' other friends, deplors the unfortunate name, Catbird, with which he is hampered, himself calls him a delightful songster, "who seeks out the very society of man, and reposes an unmerited confidence in his protection, and is treated with undeserved obloquy and contempt." The notes of different individuals, he says, vary considerably, so that sometimes his song in sweetness and compass is scarcely at all inferior to that of the ferruginous thrush. "A quaintness, however, prevails in all his efforts, and his song is frequently made up of short and blended imitations of other birds, given, however, with great emphasis, melody and variety of tone, and, like the nightingale, invading the hours of repose. In the late twilight of a summer's evening, when scarce another note is heard but the hum of the drowsy beetle, his music attains its full effect, and often rises and falls with all the swell and studied cadence of finished harmony. During the heat of the day, or late in the morning, the variety of his song declines, or he pursues his employment in silence and retirement."

Doing his full duty as biographer, Nuttall perforce refers, more in sorrow than in anger, to the "unpleasant, loud and grating cat-like *mew*, which it often utters on being approached or offended. As the irritation increases this note becomes more hoarse, reiterated, and vehement; and sometimes this petulance and anger are carried so far as to persecute every intruder who approaches the premises; and though originating, no doubt, in parental anxiety, it sometimes appears to outlive that season, and occasionally becomes such an annoyance that a revengeful and fatal blow from a stick or stone is but too often, with the thoughtless and prejudiced, the reward of this harmless and capricious provocation."

Mrs. Wright says that next to the thrushes, no bird would be so much missed from the garden as the—to her mind misnamed—Catbird. She describes the song as a brilliant recitative, varied and inimitable, beginning, "*Prut! Prut! Coquillicot! Really, really, coquillicot! Hey coquillicot! Hey! Victory!*" And the alarm cry, *Zeay! zeay!* like a metallic mewling. "It is when it is in its garden

home, and in the hedging bushes of an adjoining field, that it develops its best qualities,—lets itself out,—so to speak. The male is undoubtedly a mimic, when he so desires, but he has an individual and most delightful song, filled with unexpected turns and buoyant melody. The length of the song varies greatly, sometimes lasting almost uninterruptedly for an hour. One strain is used for an introduction and constant refrain, '*Prut! Prut! Coquillicot!*' The ejaculation, '*prut! prut!*' turns into shrill *zeay!* when he is really alarmed or angry.

"His song is only second in its colloquial variety to that of the brown thrasher, and it is sometimes difficult for a moment to distinguish between the two. He is particularly successful in imitating the whistle of the chat (itself a mimic and ventriloquist), and has several times lured me by it through bushes and briars, only to mock at me and call: Hey! Victory! in my face."

Mrs. Wright quotes Mr. Ellwanger, near whose window one sang early every morning: "Nothing could be more de-

lightful than his opening matin song, begun in dulcet undertone; did I not know from experience his long-drawn *crescendo* and the frenzy of the finale—a perfect Hungarian '*Czardus!*'" And she concludes with: "It seems strange that there should be any difference of opinion about this merry, friendly bird. It simply proves the wit of Nature, to set this merry, rippling jester, this whirlwind of delightful mockery, as a foil, a companion to the thrushes with their spiritual melodies."

If it is indeed true that "the great poets have ever been the best interpreters of the songs of birds," the assumption follows that, knowing themselves the master poet-minds of ornithology, there is method in the Catbird's mocking madness, and that, voluntary transcribers of the elusive melodies of those thrushes that steal away from human propinquity, they, like the Ages,

"Unpersuaded, pass along
The dulcet message."

JULIETTE A. OWEN.

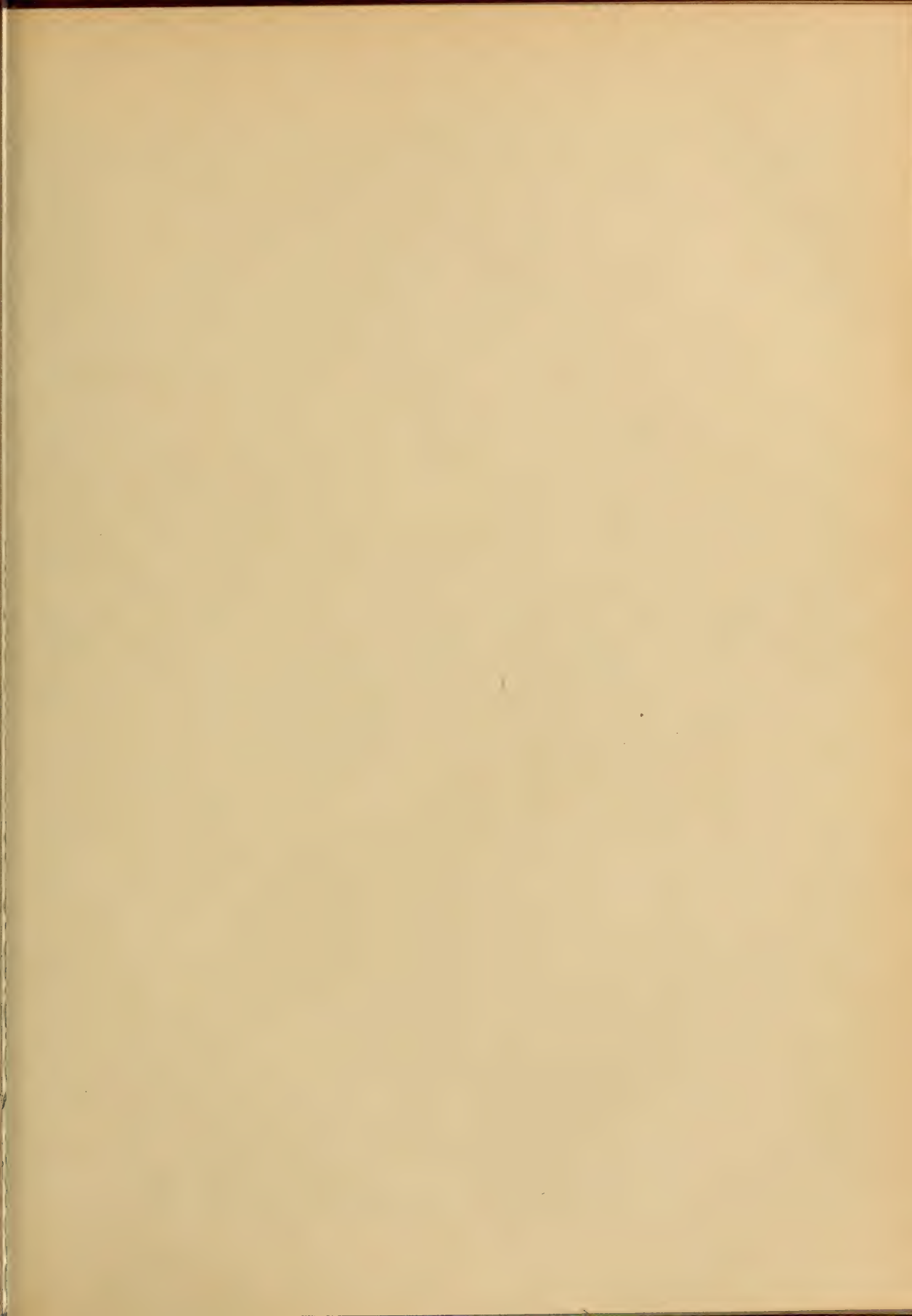
THE CATBIRD.

Wert thou Court Jester, dearest bird,
Or Minstrel singing
At nod and beck of some gay king;
Thy fresh notes ringing
As clear and sweet as honey-dew,
But harsh and whining
When vexed in soul, thy lay is changed
To sharp repining?

Well-masked in garb of monkish grey,
No color flaring;
Yet still thy silver bells ring out
In sudden daring!
Thy nest is rough and woven loose,
But holds a treasure,
Hid close in bush or thicket green,
Thy chiefest pleasure!

Coquellicot! Is this thy name,
Dear woodland rover?
Thou'rt minstrel, wit, a courtier fine,
A banished lover!

—ELLA F. MOSBY.





THE LOON.

(*Urinator imber.*)

The Loon is the largest of our diving birds. It is known also as the Great Northern Diver, the Walloon and the Guinea Duck. It is placed number seven in our code of nomenclature of North American birds. The Loon is found throughout the northern part of the northern hemisphere, and in North America it breeds from the northern portion of the United States northward. In the winter it ranges southward to the Gulf of Mexico and Lower California. It can be readily recognized in the adult stage by its large size, long, tapering body, and by the intense black of the plumage of the back and neck, with squarish dottings of white standing out in strong contrast. As the bird is formed principally for diving, the legs are short, and strong; set well back in the body, and the tarsus, flattened and quite sharp anteriorly, offering little resistance to the water in the forward strokes. The toes fold in such a manner as to be as narrow as the tarsus so that opening on the backward stroke, a powerful impetus can be obtained. So quickly can the bird disappear that it seems to be under the surface of the water before a shot can reach them.

The wings, very narrow and short for such a large bird, prevent its rising readily from the water, and it requires a great deal of flapping and paddling before the bird can take wing, but when once in full motion, especially in migration, which takes place both by day and night, the flight is high and extremely rapid.

It is said to live to a great old age and as it is continually persecuted by hunters and fishermen who wrongfully accuse it of destroying an unreasonable number of game fish, the bird has become wary and hard to obtain by shooting. Probably the greatest destruction is caused by the bird forcing its neck through the meshes of

the gill nets of the lake fishermen and being unable to withdraw its head, it drowns. A number which have been taken in this manner are sent to the Chicago market each year.

The cry, weird and melancholy, is well known to the lover of nature, especially those who have lived in Wisconsin. It is described by the Rev. J. H. Langille as follows: "Beginning on the fifth note of the scale, the voice slides through the eighth to the third of the scale above in loud, clear, sonorous tones, which on a dismal evening before a thunderstorm, the lightning already playing along the inky sky, are anything but musical. He has also another rather soft and pleasing utterance, sounding like *who-who-who-who*, the syllables being so rapidly pronounced as to sound almost like a shake of the voice—a sort of weird laughter." Its cry is always loud and melancholy and has often been likened to the howl of a wolf or the prolonged scream of a human being in distress.

In northern Illinois the Loon was formerly a common summer resident on all of our lakes of any size and nested on Calumet, Fox, and Grass Lakes in considerable numbers. As the cities and suburban towns and the numerous summer resorts increased, it has been a matter of considerable interest to note how the Loon adapts himself to the changed surroundings. The poor birds are having a pretty hard time to exist and are now practically driven out or, to speak plainly, almost exterminated, from this beautiful lake region. Ten years ago there were three pairs on Grass Lake and Lake Marie, Illinois. I watched them carefully to find their nesting site. The old birds would lead me here and there, but I could find no nest. Just before dark one night I saw birds arise from the lake and fly northeast; by watching them for several

nights and noting the general direction of their flight, I finally located a pair in a small lake seven miles from Grass Lake. It was a small pond in the woods. There was a boggy point running almost to the center of this pond, and the usual mossy-lined, saucer-shaped nest was placed on the extreme end of this point. This unusual, out-of-the-way place which the birds had selected to rear their young, and the small pond in which the nest was placed, showed me the wonderful instinct of this bird for self preservation and its wisdom in selecting a safe and secluded nesting site. In northern Wisconsin, the favorite locality for nesting is in some heavy clump of bushes on some small

island near the center of a lake, or on some point running well out into the water. Its nest is placed where the bird can enter on one side and on the approach of danger slip from the nest directly into the water. This she does, striking the water with such care and precision that there is scarcely a ripple and no splash. She then swims off about fifty feet, and when all is quiet returns to the nest. Often on warm, sunny days when it is warm enough to prevent the eggs from chilling, she will join her mate, far from the nest, and both birds by feigning crippled birds will lead all intruding parties away from the locality.

FRANK MORLEY WOODRUFF.

NOVEMBER.

At morn:

The meadow and the fields a-gem with frost,
The east a yellow flag with scarlet crossed,
The sky a crown with fainting stars embossed,
And air that makes the very heart new born—
At morn!

At noon:

The meadow and the fields a greenish dun,
The sky a turquoise sea around the sun,
The breeze ajar with perfumes overrun,
And air that seems like springtime come too soon—
At noon!

At night:

The meadow and the fields adrift in mist,
The woods a rattling throng where wild things list,
The sky a star-flecked arch by moonbeams kissed,
And air that warns of Frost King's icy bite—
At night!

—JAC LOWELL.

The beautiful is as useful as the useful.—*Victor Hugo.*

BIRDS AND NATURE

Smithsonian Inst
Mar 20 1905

CONTENTS

	Page
STANZAS (John Keats) [Poem]	193
THE BLUE JAY (H. Walton Clarke) [Illustration]	194
A SEA OF MIST (Jaen Flower) [Poem]	198
THE LARK (Nelly Hart Woodworth) [Poem]	198
THE SORA RAIL (Frank Morley Woodruff) [Illustration]	201
FALLACIES OF RULES FOR DETERMINING EDIBLE MUSHROOMS (Will Sayer Moffatt)	202
THE NONPAREIL OR PAINTED BUNTING [Illustration]	204
THE CHIMNEY SWALLOW (Jac Lowell) [Poem]	207
FUN WITH THE BIRDS (Egbert T. Bush)	208
THE MALLARD DUCK [Illustration]	213
MY LITTLE ROBIN RED (Elizabeth Roberts Burton)	214
THE YELLOW-THROATED VIREO [Illustration]	216
THE TRAP-DOOR SPIDER (Anson C. Allen)	220
THE CHRISTMAS ROSE (Cora Mae Cratty) [Poem]	222
THE SCREECH OWL (H. Walton Clark) [Illustration]	225
SOME CURIOUS ANIMALS—Part II (Belle Paxson Drury)	226
THE BLACKBURNIAN WARBLER [Illustration]	228
THE INDIAN PIPE (C. H. Woodward)	231
THE BALD EAGLE (Collins Thurber) [Illustration]	232
THE SEA GULL (Mrs. Merrill E. Gates) (Poem)	236
INDEX	237

EDITED BY WILLIAM KERR HIGLEY

ILLUSTRATED BY COLOR PHOTOGRAPHY

190311

\$1.50 a Year. 15 Cts. a Copy.

A. W. MUMFORD, Publisher

378 Wabash Ave., Chicago, Ill.

BIRDS AND NATURE

Monthly, except July and August

TERMS AND CONDITIONS OF PUBLICATION

PRICE. Subscription price is one dollar and fifty cents a year, payable in advance; with 50 assorted pictures, \$2.00; single copy, 15 cents.

POSTAGE IS PREPAID by the publisher for all subscriptions in the United States, Guam, Porto Rico, Tutuila (Samoa), Canada and Mexico. For all other countries in the Postal Union add 30 cents postage.

CHANGE OF ADDRESS. When a change of address is ordered, both the new and the old address must be given. Postmasters are not allowed to forward second-class matter until postage is sent to prepay charges. It costs two cents per copy to forward this magazine. Subscribers who do not observe this rule should not ask us to send duplicate copies.

DISCONTINUANCES. If a subscriber wishes his magazine discontinued at the expiration of his subscription, notice to that effect should be sent, otherwise it is assumed that a continuance of the subscription is desired.

HOW TO REMIT. Remittances should be sent by check, draft, express order, or money order, payable to order of A. W. Mumford. Cash should be sent in registered letter.

AGENTS. We want an energetic, courteous agent in every town and county. Write for terms and territory.

RECEIPTS. Remittances are acknowledged by change of label on wrapper, indicating date to which subscription is paid.

MAGAZINES, back numbers, from 1897, 25 cents a copy, \$2.00 a year; the 84 back numbers for \$12.60.

BOUND VOLUMES, 1 to XVI, each 8vo, 244 pages, from 40 to 60 colored pictures, 8x10 in., cloth, \$1.50. Double volumes, half morocco, \$3.00. Sixteen single volumes, cloth, \$18.00. Eight double volumes, half morocco, \$18.00.

Exchange price for bound volumes when magazines are returned: Single volumes, cloth, \$1.00. Combined volumes, half morocco, \$1.50.

COLORÉD PICTURES, assorted as desired, 2 cents each; \$1.80 per 100; \$15.00 per 1,000. The 648 pictures for \$6.48.

PREMIUMS. Either of the following colored pictures sent free with subscriptions: (1) *Song of the Lark*, 18x21, or (2) *Gladstone*, 18x24, or (3) *The Golden Pheasant*, 18x24, or (4) *Ten colored pictures from Birds and Nature*, (5) *Three Forest Tree Pictures*, 9x12, or (6) *Set of 12 Industrial Pictures*.

OTHER PUBLICATIONS.

Little Folks.....	\$1.00
School Bulletin (Monthly).....	1.00
American Primary Teacher (Monthly).....	1.00
N. E. Journal of Education (Weekly).....	2.50
Educational Review (Monthly).....	3.00

Ten per cent discount on any or all of these when ordered in combination with *Birds and Nature*. Sent to one or several addresses.

All letters should be addressed to **A. W. MUMFORD, Publisher, 378 Wabash Avenue, Chicago**

\$4.10 for \$2.00

A COMBINATION
OFFER THAT
MEANS SOMETHING

BIRDS AND NATURE (one year).....	\$1.50
BIRDS OF SONG AND STORY (Grinnell).....	1.00
GAME OF BIRDS.....	.35
GOLDEN PHEASANT (Colored Picture).....	.25
LITERATURE GAME.....	.25
GAME OF INDUSTRIES.....	.25
TWENTY-FIVE PICTURES (From Birds and Nature).....	.50

ALL FOR ONLY

\$2.00

Postage or express 25 cents

The total amount of value.....\$4.10

BIRDS AND NATURE——Monthly; 48 pages, 8x10 inches; per year, \$1.50. A magazine devoted to nature, and illustrated by color photography. It is the only periodical in the world which publishes pictures of birds, animals, insects, flowers, plants, etc., in natural colors. Eight full page plates each month.

"Certainly no periodical, and probably no book, on birds ever found anything like such favor with the public as *BIRDS AND NATURE*."—*Evening Post, New York*

BIRDS OF SONG AND STORY——A bird book for Audubon societies, 16 color plates.

GAME OF BIRDS——Illustrations of popular birds, in colors true to nature, on 52 finely enameled cards 2½x3¼ inches. Enclosed in case with full directions for playing. A beautiful and fascinating game.

GOLDEN PHEASANT——A beautiful Picture for framing. Printed in natural colors on fine paper 18x24 inches.

LITERATURE GAME——500 Questions and Answers in English Literature. 100 cards, 2½x3 inches. Interesting and instructive.

GAME OF INDUSTRIES——Educational—400 Questions and Answers on the great Industries of our country. 100 cards, 2½x3 inches.

REMEMBER——A year's subscription to *BIRDS AND NATURE* and "Birds of Song and Story" alone amount to \$2.50. If you now take *BIRDS AND NATURE* your subscription will be advanced one year.

A sample of *Birds and Nature* for a dime and two pennies—12 cents in stamps. Send for Catalogue.

A. W. MUMFORD, Publisher, 378 Wabash Avenue, Chicago.

BIRDS AND NATURE.

ILLUSTRATED BY COLOR PHOTOGRAPHY.

VOL. XVI.

DECEMBER, 1904.

No. 5

STANZAS.

In a drear-nighted December
Too happy, happy tree,
Thy branches ne'er remember
Their green felicity;
The North cannot undo them,
With a sleety whistle through them:
Nor frozen thawings glue them
From budding at the prime.

In a drear-nighted December,
Too happy, happy brook,
Thy bubblings ne'er remember
Apollo's summer look:
But with a sweet forgetting,
They stay their crystal fretting,
Never, never petting
About the frozen time.

Ah! would 'twere so with many
A gentle girl and boy!
But were there ever any
Writhed not at passed joy?
To know the change and feel it,
When there is none to heal it,
Nor numbed sense to steal it,
Was never said in rhyme.

—John Keats.

THE BLUE JAY.

(*Cyanocitta cristata.*)

Perhaps we have no better living example, in a negative way, of the old proverb that "Handsome is as handsome does" than is afforded us by the Blue Jay. Certain it is that he proves in a striking manner that to be handsome is not always to be popular, and that about as fine a bunch of feathers as can be put together may fail somewhat in making a particularly fine bird.

This is not meant to imply at the outset, that the Jay is a thoroughly bad bird; indeed, that is not at all the general notion people entertain of him. He is generally looked upon as a clown rather than a villain, and the attitude of most people is to laugh at him rather than to thirst for his blood. The most striking characteristic of the Jay is awkwardness. His flight is rather heavy and lumbering, only a sort of makeshift to take him out of danger to another scrub tree; and those of mankind who have longed to soar, have never wanted Jay's wings to do it with. His method in alighting is almost laughable; his impetus almost throws him off the branch, and he teeters ridiculously awhile, much as some of the herons do. He reminds one a good deal of the officer who "used to quit his charger in a parabolic way" and whose "method of saluting was a joy to all beholders."

Another conspicuous trait of the Jay, perhaps the predominant one, is the diversity of his ways. One of the greatest of curses, the curse of versatility is upon him, and so he is among birds, a jack of all trades and a master of none. He can do many things, but none of them well. He can make shift to hunt among leaves on the ground as ground-birds do. In autumn, tree top high, industriously hammering at an acorn, he makes a sound like a woodpecker's tapping and he bobs his head much the same way. In summer he skulks in stealthy

flight through the green covert like a detected criminal, and makes "jay-bird" sound more than ever like "jail-bird."

He is as versatile in voice as in action. Few of our birds, if any, have so large a vocabulary. In spite of the great range of notes of the brown thrasher or the mocking-bird, a trained ear can usually very quickly associate the note with the bird. The Jay, however, has in his repertoire a lot of calls undreamed of—quite likely many of them are wholly extemporaneous, as some passing mood prompts him. Some of his calls, as his clear "linnet, linnet," of summer days, are really pleasing to the ear, and the soft garrulous undertones he uses in the spring, while having confidential chats with his mate, are not at all disagreeable. He has two calls, hardly either of them to be represented by letters, which everybody recognizes. Beside this, he can imitate the cry of a hawk to perfection, and occasionally does so, perhaps for the fun of seeing the smaller birds hunt cover. He is a great tease, and seems to have no sort of use for the screech owl, and the tirade he carries on when he finds the latter bird snug in a hollow tree, is a vocal performance nearly everyone can recognize at once. Besides the calls enumerated the bird has many more, and when the bird-student hears a new voice in the woodland that he has never heard before, particularly if the voice is not musical, he will for a dozen times or so edge noiselessly toward the sound, his heart palpitating, and every sense alert for the glimpse of some new rare bird. After that he will simply make note of another Jay. It may be that this general knowledge of the bird's range of noises, rather than actual experience, has given rise to the opinion that if a Jay's tongue is split he can learn to talk. Perhaps, too, it is because the Jay is with us all the year, without being



BLUE JAY.
(*Cyanocitta cristata*).
3/4 Life-size.

COPYRIGHT 1900, BY A. W. MUMFORD, CHICAGO.

asked, that he meets the same fate as the man who doesn't withdraw his foot from his neighbor's house. With his unsettled ways, there is something vagrant about him. After all, it is surprising how much humor of a certain sort would pass out of our lives if the Blue Jay were to vanish. How much of a sort of mirth that is a bit rough, yet free from malice! And there would go, too, expressions our language would be richer and better without, the cheap slang which refers to someone as a "jay," or a hamlet of a certain sort as a "jay-town."

Even the schoolboy who has not yet arrived at definite impressions about most of the life around him, has a distinct notion about the character of the Jay, and few creatures enter into the nonsense doggerel that he knows as does the

"Jay-bird, jay-bird, settin' on a limb,
Winked at me and I winked at him.
I picked up a stone and split his shin.
Now, confound you, wink agin."

and, as a matter of fact, when the schoolboy does throw a stone at a Jay, it is not out of malice, nor even a wish to possess the bird, but much in the spirit that he would throw a snowball at a companion. Fully as the Jay has entered into nonsense-verse, he is not a bird on the whole to inspire poets; he (or his cousin, rather) fits well enough into the maudlin mutterings of Caliban. Perhaps the only place where he has entered into a strain of higher mood is where his call "through all the gloomy day" is made an accompaniment of the saddest portion of the year.

There are a large number of people, too, whose attitude toward the Jay is that of decided hatred. To them he is not simply an awkward fellow, a fraud, a sort of useless vagabond, and so on, but a villain of the deepest dye. Jays have been known to actually rob bird nests, and devour young birds, and the whole tribe has on that account been pronounced guilty. More exhaustive studies of the bird's habits, however, have tended to

show that not all Jays can be pronounced guilty, that there is wide enough a range of variation in habit among so versatile a family to make it best to decide on individual cases. Perhaps not to wait until several crimes were committed, or even one, but in no case to execute judgment until there is strong suspicion.

As the case now stands, in most places the Jays are not too abundant, and the complete absence of their calls would make the autumn days something short of being perfectly complete. So long as he does not bother us in flocks, nor is not actually found guilty as an individual, let us be forbearing and make a few allowances for him. If he could use to our understanding that many-voiced tongue of his, who knows how many allowances he could tell of, that he has been making for us?

Throughout North America, east of the Great Plains, and from the Fur Countries on the north, southward to Florida and eastern Texas, we find this beautiful bird which will announce your presence in his domain by loud and piercing cries of *Jay, Jay*, "with an arrogance of virtue which makes you question your own motives." At the approach of the nesting season, the Jays drop their love of noise, and their silence is remarkable. They seem to have learned that their voices are known to every man and boy and if used would soon reveal the location of their homes. This home of compactly interwoven sticks and rootlets is placed in a crotch or branch of a tree not far out from the trunk and from ten to forty feet from the ground. The tree selected may be one of an orchard, or an evergreen in the door-yard, but more often it is in the more quiet depths of a forest. The Jay is indeed a wise bird, when home duties require his attention. "Not a sound is made while the sticks are laid and the rootlets gathered. No whistle or call betrays the secret of the spotted eggs."

H. WALTON CLARK.

A SEA OF MIST.

All day it rained. At twilight time, singing through the valley
We heard the rushing waters of the noisy Norman's-kill;
The leafless trees that fringed the wood, seemed to toss and tremble;
And dreary stretched the pasture land, far far adown the hill.

But strange and new the landscape that greeted us at morning:
Lapping the withered orchard grass, water appeared to lie,
And spread from thence a silver sea, over hill and valley,
'Till on horizon far away it blended into sky.

Placid it lay and lovely, with two or three green islands
Where hemlocks on the hillside pushed their highest branches through;
From low clouds hanging eastward, the sun shot golden arrows
Athwart the silver of the sea, while overhead was blue.

It seemed like some enchantment. We were in another country
In landscape unfamiliar, with no hint of yesterday.
But soon the wind began to blow, the silver sea was troubled,
It rose and fell, then slowly breaking vanished far away.

—Jaen Flower.

THE LARK.

The Lark must soar to pour
Its song athwart the sky,
Earth-bound it could not hear
The heavenly music near,
Repeat the echoes in its melody.

Soar high and sing,
O Lark! on tireless wing!
Tell us who wait
The secrets thou has gleaned
At Heaven's gate!

Repeat the song
They sing above the storm,
Our songs re-form!
To thee belong
Two worlds,
Linked by thy song.

—NELLY HART WOODWORTH.



SORA RAIL.

THE SORA RAIL.

(*Porzana carolina*.)

This is probably the best known of our water birds and at times the most abundant, particularly in the Eastern States during the fall migration when they congregate on the marshes in immense numbers. In the early mornings and evenings they may be readily flushed, but during the day they lie close and may often be picked up by hand or brought to one by the dog. In past years I have no doubt that the "Calumet Region" in northern Illinois and the "Kankakee Region" in Indiana were the largest breeding ground of this bird in the United States. In Illinois, they arrive about the last of April. They seem to be rather erratic in their movements, but when they come it is in immense numbers. It has been a great pleasure to me to visit and study this gentle and unobtrusive little bird. This can be done to the best advantage when the spring has been a rather late and wet one and the grass not too high. Find a spot where the marsh runs well into the underbrush and where the water is only a few inches deep; wading through this, just after daylight, and moving very slowly, you are sure to see the Sora making its way daintily along the floating debris, raising its long legs and still longer toes higher than seems necessary, at each step and with great deliberation, picking here and there at some choice morsel and almost continually flirting its tail forwards. If you are seen by the bird, and are reasonably quiet, he will survey you with his snapping black eyes and continue to feed; after surveying one spot he will slide into the water and make for the reeds or another floating mass.

Later on, in May, according to the height of the grass or condition of the weather, the Rail builds its cup-shaped nest on the border of the sloughs, sometimes a short distance from the water and at other times on a small tussock in the

water. In some cases there is very little attempt at building up the nest and scarcely any at concealment beyond the height and thickness of the grass; but the rule is, to make an elaborate nest and weave the grasses overhead. The eggs vary from six to twelve in number and are of a yellowish drab ground color, with markings of purplish gray and brown.

The Rev. J. H. Langille gives the note as *queep, eep, ip, ip, ip, ip, ip, ip, ip*, or *quaite, quaite, peep, peep, kuk-kuk, kuk*, the first two or three syllables in long drawn coaxing tones, and the remaining syllables shorter and more hurried.

In the earlier part of the present century, before the subject of bird migration had received a great deal of investigation, the Sora Rail was the object of absurd superstition, of which Wilson in his "American Ornithology" gives an interesting account as follows:

"The natural history of the Rail, or, as it is called in Virginia, the Sora, and in South Carolina the Coot, is, to the most of our sportsmen, involved in profound and inexplicable mystery. It comes they know not whence; and goes they know not where. No one can detect their first moment of arrival; yet all at once the reedy shores and grassy marshes of our large rivers swarm with them, thousands being sometimes found within the space of a few acres; these when they venture on wing, seem to fly so feebly, and in such short fluttering flights among the reeds, as to render it highly improbable to most people that they could possibly make their way over an extensive tract of country, yet, on the first smart frost that occurs, the whole suddenly disappear, as if they had never been.

"To account for these extraordinary phenomena, it has been supposed by some that they bury themselves in the mud; but as this is every year dug into by

ditchers, and people employed in repairing the banks without any of these sleepers being found, where but a few weeks before these birds were innumerable, this theory has been generally abandoned, and here their researches into this mysterious matter generally end in the common exclamation of 'What can become of them!'

"Some profound inquirers, however, not discouraged by these difficulties, have prosecuted their researches with more success; and one of these, living a few years ago near the mouth of the James River in Virginia, where the Rail or Sora are extremely numerous, has (as I was informed on the spot) lately discovered that they change into frogs; having himself found in his meadows an animal of extraordinary kind, that appeared to be neither a sora or a frog, but, as he

expressed it, 'something between the two.' He carried it to his negro, and afterwards took it home, where it lived three days; and in his own and his negro's opinion it looked like nothing in this world but a real Sora changing into a frog! What farther confirms this grand discovery is the well-known circumstance of the frogs ceasing to hollow as soon as the Sora comes in the fall."

I will not attempt to describe the terrible slaughter of this bird of which Wilson gives a vivid and interesting account, as it causes a feeling of repulsion to all of those interested in the protection of our birds.

The range of the Sora is north to Hudson Bay in summer, south in winter to South America. It breeds in Kansas, Illinois, Long Island and to the limit of its range northward.

FRANK MORLEY WOODRUFF.

FALLACIES OF RULES FOR DETERMINING EDIBLE MUSHROOMS.

Each recurring season the soil of our pastures, meadows and woodlands yields a bounteous harvest of the various kinds of parasol-shaped mushrooms known as Agarics. This harvest would be gathered as eagerly as the wild fruits and berries but for the known fact that some kinds are poisonous. While it is true that hundreds of species are edible, a number of others are unwholesome, and a few are capable of producing fatal poisoning.

To one who has not given especial attention to these plants, the differences between the various kinds are vague and uncertain. In his perplexity the would-be mycophagist turns to some code of rules or signs for determining the differences between the edible and poisonous species. These so-called rules are not hard to find. Almost every week during the summer season they appear in one form or another

in our daily papers and popular magazines, and nearly as often we read of illness or death caused by eating poisonous fungi. While direct evidence of cause and effect is not easy to obtain, it is at least probable that most of the fatalities occur among those who have placed their faith in some "newspaper botanist's" code of rules. As an example of rules of this kind, the following appeared recently in a newspaper of wide circulation published in one of our larger cities:

"Rules which never fail to enable one to recognize the poisonous mushroom:

"1. The poisonous mushroom has a ring on the stalk near the umbrella.

"2. It has a cup into which the stalk fits.

"3. The 'gills' or ridges on the under side of the umbrella are white.

"4. It grows singly.

"5. It grows only on the ground and never on trees or stumps.

"A mushroom is not poisonous unless it has all of the first three points mentioned."

These rules, stated so positively and so confidently, were apparently drawn up for the purpose of excluding species of the genus *Amanita* (death-cup), several of which have a ring, cup, and white gills. To this extent they are commendable.

But they wholly fail when applied to poisonous species belonging to eleven other genera (*Lepiota*, *Clitocybe*, *Volvaria*, *Entoloma*, *Hebeloma*, *Stropharia*, *Psilocybe*, *Coprinus*, *Lactarius*, *Marasmius*, *Panaeolus*). In these eleven genera there are twelve American species that may cause distressing or even alarming symptoms, followed, however, by more or less rapid recovery, while there are eight others that are regarded as dangerously poisonous. An analysis of these twenty species shows that in eleven of them all three of the characters called for in rules 1, 2 and 3 above are absent; that is, the plants have no ring, no cup, and the gills are not white; that in the remaining nine, two of the characters indicating poison are wanting. In other words, one following the above "rules" would be able to reject *Amanita*, which contains eight American species that are considered dangerous, while he would incur the risk of poisoning by any one of twenty species belonging to other genera, all of which, according to the "rules which never fail" should be edible.

Other rules and tests common in popular literature will be found to be equally fallacious. For example, the following are among the signs or tests said to indicate edibility:

Pleasant taste or odor.

Skin of cap peeling readily.

Not turning black when boiled with a silver spoon or coin.

Solid stems.

Growing in pastures, not in woods.

Gills pink, turning brown as the plants mature.

Of these tests it may be said that the deadly *Amanitae* have no unpleasant odor or taste, either before or after cooking; that the skin of several of them peels as readily as that of the common mushroom of the markets; that the stems of several are solid when the plants are young; that when fresh they will not discolor silver (this test indicating that a specimen, either of a toxic or non-toxic species has

begun to decay); that some of the noxious species in the eleven genera cited above have pink gills turning dark, while others grow in pastures.

In a general way it may be stated that most of the rules or tests that have any scientific value have been prepared for the purpose of excluding some one or more species which the framer knew to be poisonous, overlooking perhaps, others equally deleterious, with which he was unfamiliar. Also, that the more positive and didactic a set of rules, the greater the ignorance of the writer and the less reliance to be placed on them.

But must mushroom-lovers forego the pleasure of gathering and eating these dainties on account of the fallacies of these rules and superstitions? By no means. The fungi differ among themselves by certain characters that are as fixed as those that exist in the higher plants. Botanists have studied them carefully, described, figured and named them, and in addition have tested the edibility of nearly every important species that occurs in the United States. The results of these studies have been recorded in various publications and are accessible to anyone who wishes to take up the study. Professor Charles H. Peck, State Botanist of New York, has published two bulletins describing and illustrating several hundred of the more common species, and there are trustworthy books to be found in all large libraries, or obtained through any bookseller. The amateur should by all means procure a book describing the edible and poisonous kinds and then study the plants he finds. By the aid of the descriptions and illustrations he will find that at the end of a single season he can identify with certainty a number of kinds that he may safely use upon his table. If he is fortunate enough to have the advice of a mycologist during his early studies, his progress will be much more rapid. The study of these lowly plants is a fascinating one, and leads into fields where there is much to be learned concerning the life-histories and economic uses of a form of vegetation that plays an important part in keeping the earth in a habitable condition.

WILL SAYER MOFFATT.

THE NONPAREIL OR PAINTED BUNTING.

(*Passerina ciris*.)

Nor did lack
Sweet music to the magic of the scene:
The little crimson-breasted Nonpareil
Was there, his tiny feet scarce bending down
The silken tendril that he lighted on
To pour his love notes;

—William Henry Timrod, "The Mocking-Bird."

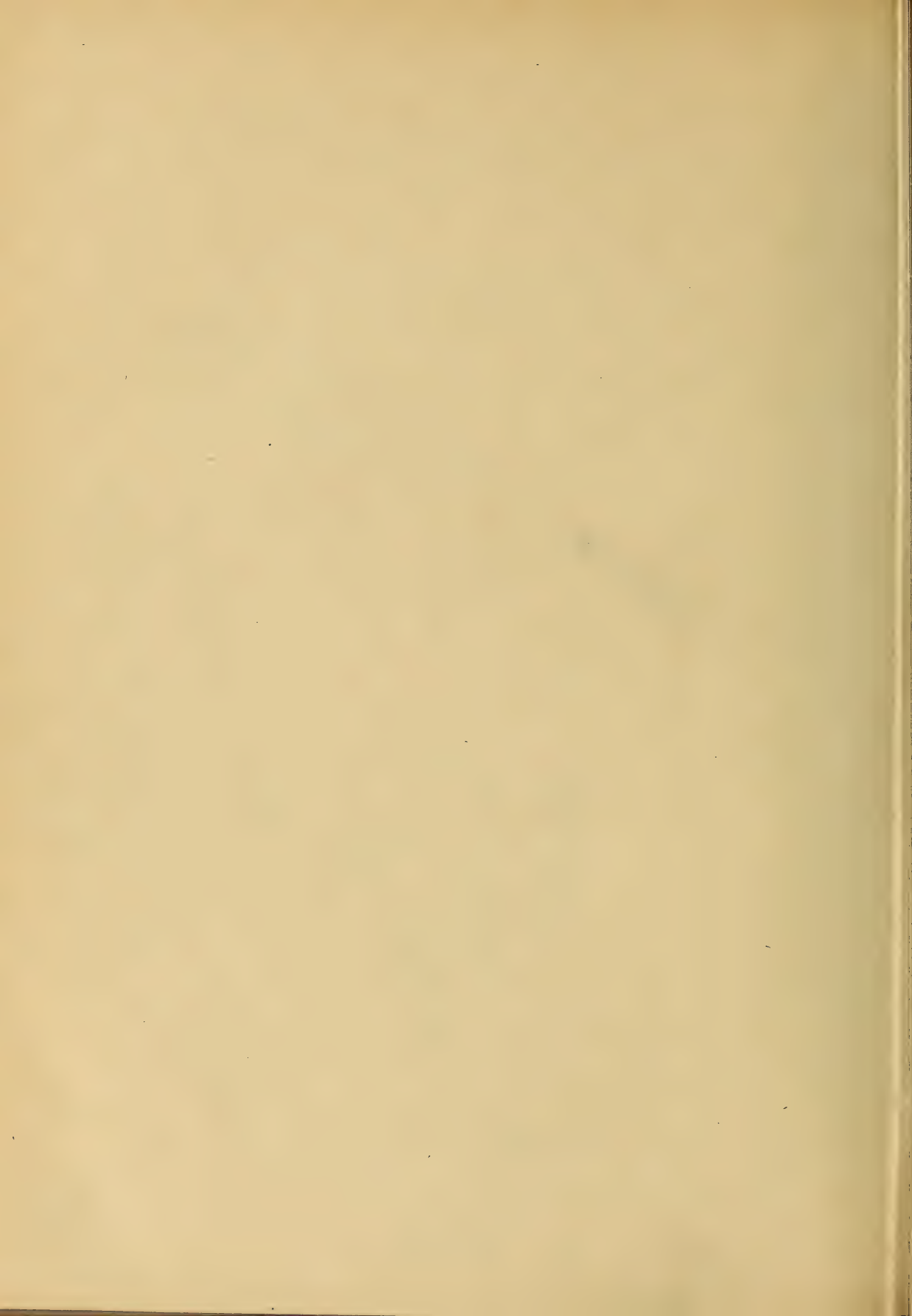
Painted Finch and Mexican Canary are also names which have been given to this gaily colored bird of our southern States. While it is a near relative of our well-known indigo bunting or indigo bird, it has a much more limited range. It winters in Mexico and Central America and during the summer months passes northward as far as North Carolina, southern Illinois, and Kansas. The plumage of the male Nonpareil is indeed most brilliant, but, as Mr. Ridgway has said, it can hardly be called beautiful for "there is an entire lack of harmony in its tints." He adds: "The name *Painted Bunting* is therefore peculiarly appropriate, the juxtaposition of uncomplimentary colors—green, blue, and red—strongly suggesting the inartistic 'daubing' of a juvenile would-be artist." The female Nonpareil does not possess the gaudily colored plumage of her mate. She is a plain matron as befits the work at their home which she alone performs. Above, her feathers are bright olive-green; below, they are white, tinged with a greenish yellow. Her wings and tail are dusky and edged with olive-green.

The natural habitat of the Nonpareil is in the low woods in the vicinity of large bodies of water and on the banks of large streams. The males especially, seldom appear in the open but remain within the shadows of the foliage of dense undergrowths. Frequently their song is the only indication of their presence. "Their notes very much resemble those of the indigo bird, but lack their energy and are more feeble and concise." Because of their song and the brilliancy of their plumage, the Nonpareils are greatly admired as pets. It is a common

cage bird in many southern districts, and especially in the homes of the French inhabitants of New Orleans and its vicinity. They seem to thrive and soon become accustomed to captivity and will sing very soon after being caught. Because of their shyness it is difficult to catch the adult birds alive. They are, however, quite extensively trapped by various methods. Audubon has described one method: "A male bird, in full plumage, is shot and stuffed in a defensive attitude, and perched among some grass seed, rice, or other food, on the same platform as the trap-cage. This is taken to the fields, or near the orangeries, and placed in so open a situation that it would be difficult for a living bird of any species to fly over it without observing it. The trap is set. A male Painted Finch passes, perceives it, and dives towards the stuffed bird, brings down the trap, and is made a prisoner. In this manner, thousands of these birds are caught every spring; and so pertinacious are they in their attacks, that even when the trap has closed upon them, they continue pecking at the feathers of the supposed rival."

In his "Bird Migration in the Mississippi Valley," Mr. W. W. Cooke gives the following excellent account of the breeding habits of the Nonpareil from the pen of Mr. H. F. Peters, of Benham, Texas: "The Nonpareil is one of my pets, and as I have five or six pairs breeding in my yard every year, I have a good opportunity to watch them. They arrive here at Benham from the tenth to the twentieth of April, the males coming some ten days or more before the females. The males spend their time playing and





frollicking until the arrival of the females, when the playing turns to courting and fighting. It is both interesting and amusing to watch the male trying to attract the attention of the female. He will hop down on the ground, spread his wings and tail, strut around and cut all sorts of capers. The first time I saw it done I thought he was wounded, and started towards him to pick him up, but soon learned my mistake. They are not very quarrelsome birds, and soon commence to pair. At this period, the male is very attentive, but after nest-building has commenced he is quite another bird. He helps to find the place to build, and appears to be very particular about it, but as soon as it is decided upon, he retires from business. He never works; he is a little dude, too finely dressed to do any labor. I have frequently seen him sitting a few feet above the nest, singing unconcernedly, while his mate would be struggling with a yard or two of twine, or a piece of old rag to weave into the nest. I have never seen the male help in nest building, or in feeding the young while in the nest, but have seen him feed the young after they were fledged. A

cat caught a female when the young were unfledged, and I watched her mate to see if he would raise the young. He never fed them once. He let them die, and went off and found another mate, who raised a family of young not more than six feet from the other nest. While the female is very gentle and tame, frequently coming to the door in search of material for the nest, and food for the young, the male is shy and keeps at a distance. When the young are full grown he troubles himself no more about them. The middle of August he leaves wife and family and goes south to his winter home. The female and young remain until the second week in October."

The nest is quite a neat and compact structure, and is usually composed of interwoven leaves, twigs, fine rootlets, shreds of bark and fine grasses. It is lined with fine grass, horse hairs, or fine rootlets. It is usually placed in low bushes, but sometimes in saplings. Nests have been found which consisted of two stories, each story containing eggs, and two or more nests are often built very near to each other.

THE CHIMNEY SWALLOWS.

With circling swoops they flit across my view,
Like winged darts by hidden power sent,
Then lightning like,
The chimney strike,
And pass from sight—and then, behold, anew,
The air is by their sable feathers rent!

They seem to play some game of idle chase,
As in and out the tiny beings fly;
Till fading dim,
On heaven's rim,
The sun goes down and shadows hide its face,
And they are lost against the murky sky.

—JAC LOWELL.

FUN WITH THE BIRDS.

I.

There has been plenty of work and plenty of fun on the farm this summer—a very desirable combination. Work without something to cheer us becomes drudgery; fun without work becomes still more irksome. On the old farm, among the plants and birds and trees, it is never all one thing or the other. Country life in summer need never be dull. If sometimes in winter we envy our city cousins, their gayer lot and greater advantages in summer, we balance the account by listening to the birds and pitying our cousins.

Our birds know us and we know them. It is a case of mutual study, begun several years ago and kept up on both sides with mutual satisfaction. It is not likely that our feathered friends get as much pleasure out of it as we do, but they seem satisfied with their share, and we have every reason to be satisfied with ours.

The song sparrow is entitled to first mention, for he stays with us throughout the year, singing late in autumn, early in spring, and occasionally during the winter. He is a charming little fellow, frank and confiding, with tones so sweet that we know him as little "Silver Bells." Somebody calls this favorite dowdy in dress and altogether unprepossessing in appearance. One can hardly help wondering whether that writer ever saw a song sparrow. We should like to introduce him to our tidy little friend, so neat, so unpretentious, and withal so generous that, when one is sick, the bird seems to feel it his duty to spend much time on a branch just opposite the window, cheering the sufferer with his delightful song.

The Baltimore orioles built as usual on a swaying branch of the big maple. These birds come to us about the first of May. They usually spend several days

in looking over the various sites, making sure that things are about as they left them in September, and driving away intruders. Fierce battles often occur; other orioles would like one of those branches, and seemingly cannot see why it takes all of a big tree to hold one little family. A year or two ago it took a long and noisy war to settle the boundaries. When peace was at last declared, each party went sullenly to work, one building on the extreme east and the other on the extreme west of the tree. That was the only time I have ever known two pair of orioles to build in the same tree. This year there was the usual contest, but one party was forced to retire to the orchard. Then our pre-emptors proceeded to build in a manner which has been somewhat modified by close association with the people of "Clovercroft."

It is according to our observation that Madam Oriole will not allow her husband to take any part in building the nest. It is his business to stand guard, and to fight when there is any fighting to be done; it is her business to gather material and build the nest. If "Peter," as we call him because of his shrill cry, which sounds like "Peter, Peter, Pete," happens to come too near during the process of building, he is forcibly reminded that when needed he will be called for.

It was Madam, then, that began building after her modified plan. Having selected the most desirable site and placed a few timbers, she began to manifest great uneasiness, screaming and flitting about the old cherry tree a few feet from the window, carefully examining its trunk to see if it bore anything to her liking. Her actions would have puzzled a stranger; to us who knew her so well they were perfectly clear. She knew from past experience that most

desirable strings should be hanging about on the rough bark of that tree, and she did not mean to give up until they were.

Of course, her faith was rewarded, and truly it was more blessed to give than to receive. Grocers' cord was broken into pieces from two to three feet long and hung about the body of the tree as in years gone by. This was generally done just before meal time so that all might watch the bird through the windows and enjoy her triumph. Scarcely had one time to get into the house before the anxious bird would fly down, grab a string, and go triumphantly to her nest. In a short time all were carefully woven into that wonderful work of art.

It has been facetiously remarked that we are encouraging laziness in the bird; and in truth it does look so. She positively refused to hunt for material, but waited impatiently for the donation, scolding vigorously when it did not come soon enough. Fully a hundred pieces were used before the nest was complete.

Experiments were tried with strings of various colors, but only white ones were wanted in the framework. Whether this was mere caprice or was the result of fear that colors would make the nest too conspicuous, we can only conjecture; but strangely enough, after the nest was seemingly completed, she carried off the colored strings, both dull and bright, probably to be used as the lining. Certainly not one of them showed from the outside.

A rather amusing incident occurred during the building. One day "Peter" took it into his head—manlike, as the young lady of the family said—to poke his nose into what was none of his business. During the absence of his wife, he stole into the house to see how things were going. One hasty glance; Madam was coming; in his eagerness to avoid a scene, he somehow got one wing tangled in the maze of strings which, to the masculine bird as well as to man, seemed to be a perfect mystery. There was Madam, perched on a limb just above; and there was "Peter," literally caught in the very act of intruding. He strug-

gled and screamed, while his spouse hopped about, eying him in the most tantalizing manner. After punishing him sufficiently in this way, she gave proof of her feminine heart by releasing him from his embarrassing predicament.

II.

The bluebirds had a hard fight for their box in the cherry tree. The English sparrows were bent upon having that box, and many severe battles were fought to decide the question of ownership. It should be stated that the bluebirds had some advantage in a treaty of alliance with the writer, which brought to their aid a piece of heavy artillery in the form of a 22-caliber rifle. It was surprising to see how quickly and how thoroughly the little warriors on both sides understood the nature of the alliance. On catching sight of the man with the gun, the sparrows always beat a hasty retreat, while bluebirds remained to look and sing their gratitude. But the sparrows were not all quick enough, and several of them fell before they finally decided to give up the fight.

On one occasion a sparrow was shot from a low limb while a bluebird sat on an interested spectator a few feet above. As the sparrow fell to the ground, "Snowflake," the pet cat, ran to grab it. Instead of flying off in a fright, the bluebird hopped down to the limb from which the sparrow had just fallen, peering down at its quivering foe and shaking its wings in unmistakable delight. I have noticed the same discrimination on the part of the wren. When the sparrow that had been trying long and hard to evict the little singer from its home in the wall was shot before its eyes, the wren expressed its satisfaction by making its frail body fairly quiver with song.

A pair of pewees built on the plate of the open shed. The rafters merely lie on the plate and extend far beyond, leaving a fine space between it and the roof. The birds started four nests against as many rafters, and for some time it was hard to tell which they meant to occupy. At last they decided—or possibly it was so intended from the start—to use the second nest from the east, leaving the first

almost completed and the third and fourth well under way. Why this seeming waste of labor I do not know. Can it be that there is something of the land-grabbing instinct in birds as well as men? It seems that the little builders may have been taking advantage of some sort of pre-emption law known to their kind, in order to secure desirable sites for future use or to avoid the danger of having too close neighbors. With them, as with our pre-emptors, it may be necessary to "improve" a claim in order to hold it against later claimants.

Wrens pursue the same tactics. Two boxes are situated about thirty yards apart. Each spring for several years a pair of wrens have begun to build in both at the same time, keeping up the divided labor for a few days and then settling in the farther box. The other then receives very little attention until they are ready to prepare for the second brood of the summer, which is always hatched out in the neglected box. The presumption is that the birds have this in view all the time, but there seems to be no way of proving it.

Wrens and pewees become very familiar by close association. A year or two ago the mistress of the house was seated near the wall of an outbuilding, just below the hole in which a pair of wrens had their nest. Her duties had often brought her near them, to their evident satisfaction; but this was a new departure, and the confiding little creatures were somewhat worried. The nest was scarcely three feet above her head, and there were hungry babies within. They held noisy consultations, sang

jerky snatches of song to show how little they cared, and then began to flit in and out with much scolding and many suspicious glances at the intruder. At last one of them found courage to make a vigorous attack upon the offender. After striking her viciously on the head, it flew, chattering away to sing its triumph, when the amused lady concluded to give up the field to the valiant little defender of its home.

One day while sorting strawberries I noticed a young pewee that kept flitting about, eying me critically and giving a sharp cry now and then as if overflowing with curiosity to know the meaning of such proceedings. My mind soon drifted away from the bird, but was suddenly brought back when it alighted on my shoulder. By turning the head very slowly so as not to frighten him, I could look into his bright little eyes while he looked wonderingly into mine. One word, designed to call the attention of the pickers, so frightened him that he flew, screaming, away. It might not be flattering to one's vanity, but I should really like to know just what he thought while looking so sharply into the eyes of the monster.

We may be foolish to spend so much time in watching the birds and talking to them as if they could understand; but there is something in it that makes life more enjoyable—really better worth living. And, after all, isn't it the wisest course to get out of life as much harmless pleasure as we can? If so, there is no better place than the country and no better way than by communing with the birds.

EGBERT T. BUSH.



FROM COL. CHI. ACAD. SCIENCES.

62

MALLARD DUCK.
(*Anas boschas*).

COPYRIGHT 1909, BY A. W. MUMFORD, CHICAGO.

THE MALLARD DUCK.

(*Anas boschas.*)

Few of the ducks and, in fact, few other birds are more beautiful than the Mallard as it swims easily and with well poised head in the waters of our streams and lakes. Mr. Langille has well described the beauty of its plumage. He says: "The rich glossy-green of the neck of the male, his yellow bill and legs, the rich vinous-brown of his breast, and the gray of his under parts, the pure white tail of gracefully-pointed feathers, ornamented by the recurved upper tail coverts of glossy-green or purple, are simply resplendent in the bright morning sun, so intensified by the reflection from the pure sparkling sheet of snow." His beauty is greatly enhanced when he is near his plainer mate. Her plumage is brownish dusky above, the feathers having pale ochre colored edges. Beneath, the plumage is also of a pale ochre color with dusky colored centers on the feathers. Its bill is dark olive-greenish in color except along the edges, where it is more yellow.

The Mallard is quite a cosmopolitan species, its range including the northern hemisphere. It is quite generally distributed in North America, and breeds from the Southern States northward though much more commonly north of Iowa, Illinois, and Indiana. It winters from those States and Delaware, southward to Cuba and Panama. In open winters, the Mallards often remain quite far north, and wherever there is plenty of open water and food they may become winter residents. They migrate northward early in the spring and are sometimes caught by a severe period of cold weather when the streams and lakes become frozen over, then from "swimmers, they become skaters." Mr. Amos W. Butler says in his *Birds of Indiana*: "Mr. Ruthven Deane informs me that March 13, 1892, a rough, cold day, when boatmen were compelled to break ice

over a mile to get their boat through, boat paddles and men were coated with ice, and English Lake (Indiana) marshes were mostly ice bound, there were thousands of ducks and geese sitting around in droves on the ice."

Early in the spring, the Mallards mate and, leaving the flocks, seek a site on which to establish their home. The nest is usually placed on the ground of marshes or in the midst of water plants. Occasionally it is built on higher ground, but never at any great distance from water, for it is absolutely essential to the welfare of the newly hatched young that they should be led immediately to the water. There the wonderfully devoted mother guards them and assists them in the procuring of food. On the near approach of danger the fond mother will give a warning cry and endeavor to attract attention to herself, while the young are hiding, by feigning injury. The young are very active, dive readily and quickly, and will remain under water for some time with only their bills protruding above the surface. The male is not very useful to his mate during the period of incubation, for at that time he leaves her in order to moult. She, alone, has not only to perform the duties of incubation but also those of caring for and raising the young. He does not appear in their company again until the young are fully grown and various families are gathered in flocks. In the spring, however, the gallant drake is very watchful over his mate and shows her every attention. Some authorities claim that they remain paired for life, and that he does not help during the time of nesting, and in the care of the young, simply because he is unable to do so on account of the moulting of his plumage toward the last of June. At that time he loses the power of flight for a short time and only regains his plumage in the early

fall. The Mallard is the ancestor of the domestic duck, but in the barnyard it seems to have lost many of its wild habits. There, the drake does not mate for life, but is decidedly polygamous.

In "Water Birds of North America" we find the following excellent description of some of the Mallard's habits: "It walks with ease, and can even run with considerable speed, or dive, if forced to do so; but never dives in order to feed. Its food consists chiefly of seeds of grasses, fibrous roots of plants, worms, mollusks, and insects. In feeding in shallow water it keeps the hind part of its body erect, while it searches the muddy bottom with its bill. When alarmed and made to fly, it utters a loud *quack*, the cry of the female being the louder. It feeds silently; but after hunger is appeased, it amuses itself with various jabberings, swims about, moves its head backward and forward, throws the water over its back, shoots along the surface, half flying, half running, and seems quite playful. If alarmed, it springs up at once with a bound, rises obliquely to a considerable height, and flies off with great speed, the wings producing a whistling sound. It flies by repeated flaps, without sailing or undulations; and when in full flight its speed is

hardly less than a hundred miles an hour."

The nest of the Mallard is quite large and loosely constructed with coarse grasses, sedges, leaves, or any material that may be near at hand and can be easily scraped together into a sheltered place on the ground. While the ground is the natural nesting place of this duck, in very rare instances it has been known to nest in trees, in the deserted home of some large bird. The mother duck is a close sitter and has been known to allow herself to be lifted from the nest. Whenever she does leave the nest she covers the eggs with hay, feathers or any soft material that may be near, and, as the incubation period of about four weeks draws to a close, she sits even more closely and may not leave the nest for several days. She is, indeed, a most faithful mother and many touching incidents have occurred which show that she is totally forgetful of self and deeply attached to her offspring.

Mr. Maurice Thompson has said: "I need not say to the sportsman that the Mallard is the king's own duck for the table. The canvasback does not surpass it. I have shot corn-fed Mallards whose flesh was as sweet as that of a young quail, and at the same time as choice as that of the woodcock."

MY LITTLE ROBIN RED.

One morning I heard a great racket among the birds in the back yard near the porch. I ran out to see what the trouble was, and found that a young robin had fallen out of its nest to the ground. The parents were almost wild with anxiety. They had come close up to the porch and perched themselves on the clothes-line, flying by fits to the ground, then back again to the clothes-line, then to the fence. All this time they kept up a great clatter, while the young

bird flopped helplessly about on the ground. They were joined by a catbird, who, evidently, was as much excited as they. He flew about, trying to give sympathy it seemed, as assistance was quite out of the question.

I had always wanted a pet robin, and I felt that my opportunity had come. So many stories had been told me about the attractiveness of tame robins, how cunning and affectionate they were, that I longed to have one. Slowly and quietly

I approached the little fellow, thinking I would have no trouble in catching him as robins are so tame. When I came near, however, the older birds set up a greater clamor than ever. One would have thought that Bedlam had been let loose. They were actually crazy. I could not have believed that three small birds knew how to make so much noise. I thought that they would fly into my face and peck my eyes out. I was so frightened by their swooping down close to my head and shoulders, fairly shrieking with anger, that once I turned to run. This seemed so silly, however, that I summoned courage and caught the little fellow, carrying him into the house. I put him into a small pasteboard box and covered this with a book, allowing air to enter at one corner.

He was a fat, pudgy little thing, as all young robins are, and he struggled violently to break out. As I did not want to keep him in the box I prepared a small round basket for him, putting some pieces of cotton in it for a nest. Next I wove some twine over the top of the basket, allowing a space large enough to put the bird in. When he was safe inside I finished the cover, making the meshes large enough for him to put his bill through, but not large enough for his head. All the time I worked he kept biting viciously at my fingers and struggling to break out. The basket was hung on the porch so that the family might keep the ties of relationship firm, by visiting him.

I gave him some food, bits of apple, a worm or two and other delicacies, then left him. Returning fifteen minutes later I found Master Robin hopping about on the porch. This would never do, for the cat would soon find him and put an end to his career. I put him back in his nest, and, although I had thought his first cover had been woven securely, I was doubly careful about the second.

Nevertheless, he tore this as he did the other and was out on the porch soon again. He worked hard at the third, too, but I remained near so that he did not accomplish much. He certainly was a remarkably persevering little fellow.

His mother, who had remained near at first, seemed to have abandoned him in the afternoon. As I had just been reading that a young robin requires each day a pile of worms three times the size of its body, I had hoped that the mother would help to feed him, as mother birds often do when their young are in captivity. I was horrified at the thought of having to dig so many worms in one day. I reckoned, at that rate, the remainder of my life would be devoted almost exclusively to digging worms. With that prospect before me, as hours passed without bringing the mother back, I unfastened the covering and hung the basket on the clothes-line. In a few moments the prisoner had escaped and was seen hopping about on the ground with his mother for a companion. She had not been very far away at any time, I suspect. She had a worm in her bill and with this she coaxed the little one onward. She would hop up quite close to him, then fly to the fence, then back again, almost putting the worm into his mouth. This she never did, however. She drew him nearer and nearer to the fence and finally had him through it. This seemed to be a great relief, as though the most dangerous part of the journey had been accomplished. I watched them for more than a half hour, and all the while she kept up her coaxing and begging, until at the end of that time they had crossed the drive and entered the garden. It had been slow work, but they evidently were near home now. The old bird still had the worm in her mouth and kept it there until the young one was well hidden in the bushes.

ELIZABETH ROBERTS BURTON.

THE YELLOW-THROATED VIREO.

(*Vireo flavifrons*.)

There are many illustrations of that wonderful plan of the Creator by which the equilibrium of Nature is kept constant. Left to herself and not changed by the ever active influence of the inventive mind of man, Nature would always be in balance. No species would predominate over all life, yet those which are the best fitted for life in their environment would survive. Every form of life seems to have enemies which prey upon it. There is a constant fight for existence, and "among us and about us, animals and plants as well as men bring to their aid every means which will in any way secure advantages to themselves and their posterity." In nature these advantages are secured by gradual development; those individuals surviving which are protected by some peculiar characteristic which is retained and further developed in their offspring until after many generations, the species becomes almost immune from the attacks of their worst enemies.

Probably no division of animal life would upset the balance of life more quickly than the insects, for as a whole they develop rapidly and their progeny are exceedingly numerous. It has been estimated that they comprise four-fifths of all animal life, and that there are now quite 250,000 species to which names have been given. These insects have enemies among their own kind, among the fish, the reptiles, the mammals and above all, among the birds. The insect-eating birds form one of the best illustrations of how Nature's balance is retained. They are always around about us, and their song and appearance influence us to note their habits. The fly-catchers chiefly catch their insect food while on the wing; the warblers flit through the foliage picking an insect here and there; the *Vireos* "patiently

glean their food from the under surface of leaves, crevices in the bark, etc." In various ways other groups of birds prey upon insects.

The Vireos, of which there are about fifty species, are especially interesting to us, for they are American birds though the larger number of them are confined to arboreal and shrubby districts of the tropical regions of Central and South America. All are musical and some of them are gifted singers. But it is not their melodious song alone which attracts our fancy, for they are also clothed with a beautiful plumage and they build a most interesting home. This home is a nest of great architectural beauty, and shows remarkable ingenuity in its construction. In form, the Vireo's nest is always a deep cup, "about two-thirds of a sphere in its form, and truncated at the top. It is usually suspended from the fork of two, and even more, converging twigs, the margin being very neatly overwoven so as to embrace and cover them." The nests are generally so placed that they are well concealed by thick foliage, especially from above. The habits, too, of all the Vireos are interesting. While some of the species do not always shun the habitations of man and will build their nests on the pendant branches of the trees of gardens, roadsides, parks and public squares, most of the Vireos are unknown excepting to the close students of nature. Searching the crevices in the bark and the under surface of leaves for their food, these birds are quite hidden from view. Then, too, many of the species frequent only the larger growths of forests. But they are happy in their work and sing or utter their call-notes quite throughout the day. Of one of the Vireos the poet has written:



FROM COL. F. M. WOODRUFF.

YELLOW-THROATED VIREO.
(*Vireo flavifrons*).
‡ Life-size.

COPYRIGHT 1900, BY A. W. MUMFORD, CHICAGO.



Sweet little prattler, whom the morning sun
 Found singing, and this livelong summer day
 Keeps warbling still: here have I dreamed
 away
 Two bright and happy hours, that passed like
 one,
 Lulled by thy silvery converse, just begun
 And never ended.

Throughout eastern North America, east of the Great Plains and from Florida to Newfoundland and Manitoba, the Yellow-throated Vireo frequents the tree tops of forest, orchard, and lawn, seldom descending from the "upper story of his home." In this habitat this Vireo may be easily known by its habits and by the bright yellow color of its breast. To the initiated, its song and its call notes are also a ready means of identification. While it is a bird of the forests, especially the forests of lowlands, its habits vary greatly and are adapted to the locality in which it may have located. Excepting the time of nesting, when this "beauty of the Vireo family" prefers, though it does not always select the seclusion of the foliage of tall trees on the banks of a stream, it may become quite familiar and seem to enjoy the society of man.

The Yellow-throated Vireo, which Mr. Ridgway has designated "The most remarkable of all the species of the family which occur within the United States," is well described by the words of Neltje Blanchan regarding the Vireo group of birds: "A group of neat, active, stoutly built, and vigorous little birds of yellow, greenish, and white plumage; birds that love the trees, and whose feathers reflect the coloring of the leaves they hide, hunt, and nest among." Mr. Ridgway considers it the finest songster of all those Vireos which reach the northern States, and says that it has the "loudest notes of admonition and reproof, and is the handsomest in plumage." Mr. Chapman writes enthusiastically of its song. He says: "If the red-eyed vireo is a soprano, the Yellow-throat is a contralto. He sings much the same tune, but his notes are deeper and richer, while they are uttered more deliberately and with greater expression than those of his somewhat too voluble cousin. 'See me; I'm here; where are you?' he calls, and at intervals repeats his question in varying forms. Some-

times he astonishes us by an intricate liquid trill which suggests the wonderful song of the ruby kinglet, but which unfortunately is sometimes marred by the scolding notes that precede or follow it."

An early writer on ornithology says of the Yellow-throated Vireo: "This summer species is found chiefly in the woods, hunting among the high branches; and has an indolent and plaintive note, which it repeats, with little variation, every ten or twelve seconds, like *preed, preed*, etc. It is often heard in company with the red-eyed flycatcher (*vireo*); the loud, energetic notes of the latter, mingling with the soft, languid warble of the former, producing an agreeable effect, particularly during the burning heat of noon, when almost every other songster but these two is silent. Those who loiter through the shades of our magnificent forests at that hour will easily recognize both species." Mr. Amos W. Butler speaks of its song as fine and peculiar, "commencing always with a clear and mellow *queery, queery*." He also says that its alarm note reminds him of that of the wren.

The song of this Vireo is varied and quite confusing. It differs from the red-eyed vireo in having "rough-edged notes, in briefer phrases." The song is also uttered with greater deliberation and emphasized expression. Reverend J. H. Langille says: "It keeps well up in the tops of trees, diligently gleaning as it sings, *vireo, viree-ee, wee-ree*, etc., in tones rather shrill for a vireo, and not nearly so finely modulated and fluent as those of its relative the red-eye, but greatly resembling them." The song, while often very similar to that of the warbling vireo differs always in variety and strength. Mr. Dawson likens its very characteristic scolding notes, or "choleric tirade" as he calls them, to the syllables, "*zee, tzu, tzu, tzu, tzu, tzu, tzu, tzu*, becoming rapid at first and then slowing down; or else plain *tzu tzu tzu tzu tzu tzu tzu tzu* with exceeding rapidity at the start and a rallendo finish." Mr. Dawson also says that these scolding notes form a "nutmeg-grater cry like the house wren's, but on a larger scale."

The nesting habits of the Yellow-throated Vireo are most interesting. It

breeds through the eastern United States from Florida and the Gulf of Mexico northward to Newfoundland and Manitoba. During its migrations it is not uncommon in the larger parks of cities and in suburban retreats, but for a nesting site it prefers, but does not always select, the wooded margins of streams. In the quiet seclusion of such retreats it builds its nest in the trees, from ten to forty feet above the ground. The nests of this species are the most beautiful of those of all the vireos. While the materials used in their construction are not unlike those used by the other vireos, the nests are somewhat larger. They are frequently entirely covered, in a most artistic manner, with lichens and mosses which are fastened to the outer surface of the nest with the webs of spiders and

threads from the silky covering of the cocoons of silk-weaving moths. Thus the nests resemble bunches of moss, pendulous from the forked branches of the trees. The nests are constructed by interweaving various fine fibers, both plant and animal hairs, grasses, and sometimes pieces of string and shreds of cloth. The nests are certainly among the most beautiful, if indeed they are not the finest, specimens of bird architecture to be found in temperate America. They are pensile cradles for the young birds. The male assists his mate in the performance of the duties of incubation, but he has the unfortunate habit of singing while on the nest—a habit which shows a happy disposition but is opposed to the best interests of the birds.

THE TRAP DOOR SPIDER.

The keenest observers of nature, however far they may have roamed and however closely they may have watched the various phases of animal life, have found nothing therein more mysteriously wonderful than the Trap Door Spider of the genus *Ctenizae* and the extensive family *Araneidae*.

The spider is often incorrectly called an insect, but, in unscientific phrase, it is a crab of the tarantula variety. The Trap Door species is widely distributed, but rarely found in the eastern or northern States. It is plentiful in the southwestern States and on the southern Pacific slope, and numerous on the Island of Jamaica, and in these regions has been carefully investigated by naturalists and other observers.

Its habitations, however, are its chief revealers of its skill. These are built on the same general plan, but differ in details according to locality. Their main features are a cylindrical well, finished with a coating which is composed of a kind of silky fiber, and a trap door covering, for protection against enemies and the elements.

The spider like the rest of the crab families, has no neck, and in this respect differs from all the insects. The Trap Door Spider has only two eyes, while some other species have as many as eight, which is the limit of visual equipment of this extended genus. It is in the insect families, not among the crabs, that we often find in a single specimen too many eyes to count in a hurry. The drone bee, for instance, has twenty-five thousand eyes, the queen bee twenty thousand, and the neuter or working bee twelve thousand. Why so many when wise man, often wishing to look up and down and towards every point of the compass at once, has but two? who can tell? His advantages over insects and crabs are many, and sometimes he ruthlessly slays them by thousands without harm to himself, but in the matter of eyes, on which he is largely dependent for knowledge, the bee that gathers his honey, if it could laugh might laugh him to scorn. And we shall presently see that the Trap Door Spider, with its two eyes and minute brain, can do mechanical things which he, with his best ingenuity and innumerable

tools, is unable to do, and which are not surpassed in skill and finish of workmanship by those of any of the animal creation. This will be made apparent by a detailed description of its houses on the Pacific slope. They are mathematically correct, are based upon well-known scientific principles, and show an exquisite art adapted to the spider's needs. Moreover, the builder seems to know a good deal about organic chemistry, for it makes several compounds of varying materials, for its house, and they always serve the ends for which they are designed. Unlike man, it makes no mistakes in its compounding, mason work, painting and weaving, while its art is perfect of its kind.

All spiders are carnivorous or insectivorous, and employ various devices to capture their prey, which they prefer to devour alive. As the Trap Door Spider is a nocturnal animal, its methods of securing food are not well known, but doubtless they are as skillful as its building operations. These, after a suitable spot has been selected, are begun by digging a vertical barrel-shaped well, bulging from an inch in diameter at each end to an inch and a half at the centre. As the excavation goes on, the spider carries every particle of earth taken out, some distance away and scatters it over a considerable space, so that it may not betray the location of its home. When the digging is finished, it mixes a concrete of lime, pebbles and bits of broken stone and, adding water, it has a perfect cement, and begins the foundation by filling in this well about one inch solid. It then commences the cylinder with a cup shape bottom. Then it covers the walls with cement, thick enough to reduce the interior diameter about one-half, and makes the surface as smooth as polished marble. The inner rim at the top is accurately beveled, and thus made ready for the placing of the trap door from which the spider takes its name. This door is a marvel of ingenious construction. It is composed of some fibrous substance, gathered or made by the spider, and is covered on both upper and under sides with cement. The upper side is flat and level with the surface of the ground, but the under side is convex, so that the center is strengthened by a

quarter-inch of thickness and the door thereby weighted to keep it securely shut. Near the outer rim, it is beveled with such skill that it exactly fits the beveling in the wall which has been mentioned, and when shut is both water tight and air tight; but for an additional protection against the elements there is a thin fibrous extension of the upper rim which projects beyond the wall, and carries off the water like the eaves of our houses. An almost invisible hinge connects the door with the inner wall, and on this it will swing up and down as nicely as any human made door. The substance of the hinge seems to be frictionless, for although it may have been used thousands of times it never shows signs of wear. The scorching rays of the summer sun do not expand it, winter's severest cold does not contract it, and no climatic changes of any kind injure this unequaled hinge. If it swelled or shrunk in the least it would put the door out of adjustment, make the inmate insecure, and bring ruin to its abode, but it is proof against both. Nor does it rot, rust or deteriorate in any way. Through all exposures and invasions of insects the hinge retains its flexibility and remains unchanged, the most wonderful of mechanical contrivances. No scientist or mechanic or both together, can duplicate it, and no other animal big or little has made anything to compare with it.

Near the hinge on either side, are guards of the same mysterious material, to hold the door in place, and when open, keep it perfectly poised in a perpendicular position; and yet, so perfect is the adjustment that the least touch causes the door to close. These guards are flexible, but do not stretch, and hold the door at any point of stoppage when open. When closed they are automatically folded together, and in the folding a tube is formed on one side about the size of a pin, which is open at both ends for the purpose of letting air into the cylinder where the spider lives, but it is turned down at the outer end so that when it rains, water will not get into the house. Beside the tube is a latch which is the spider's open sesame for entrance when it comes home from its excursions. It is so minute a protrusion that it is not discernible to the naked eye, and can only

be found by feeling daintily along the outer rim of the door, which readily opens when the latch is touched, and this is the only means of opening from the outside.

After all this astounding mechanism comes the spider's fine art, for it proceeds to cover the walls with a kind of paint which resembles silver bronze of a rich dead finish, and which, whatever its exposures may be, remains uncorroded and untarnished through many years. And then the artist adds to this silvery background an elegant wall drapery of a gauzy silken fabric, which is the product of its own loom, after its own designs, and so minutely complex and delicate in structure that it contains a thousand threads to the inch, and its beauty can only be distinctly seen by the use of the microscope. The completed house is so exquisitely perfect that it seems a kind of natural growth, like a shapely tree or a beautiful flower.

All this admirable constructive work of a little creeper with a pin-head sized brain raises anew the old query, "Have animals

reason? or are they guided wholly by the something we call instinct?" There is a theory that the immanent God enters into the creatures of the animal kingdom other than man in such ways and to such degrees as to guide them according to their needs in their various environments, but does not add man's self-conscious reasoning and does not educate them into new methods; that they do only what they are impelled to do by this pervading Oversoul without much change through the ages. There is another theory that many of them possess self conscious intelligence for thought and action within the limits of their necessities, perhaps more and better than our dim human eyes are capable of discerning. There is nothing in nature more fortifying to this latter theory than the doings of the Trap Door Spider, and there may be thoughts and emotions in the microscopic brain cells of the little land crab which, if it could communicate them to us, would amaze us more than all its wonderful mechanical art.

ANSON C. ALLEN.

THE CHRISTMAS ROSE.

Among the mighty mountains
A fair, white flower grows,
Like the smile on the lips of a Titan,
'Tis the lovely Christmas rose.

Braving the snows of their winter
By the snow of its tender leaf,
Tinged with the faintest purple,
As joy is tinged with grief,

Out of the buried summer
Rises this child of bloom,
As the Child of a love Divine
In a weary world found room.

—Cora Mae Cratty.



FROM COL. OH. ACAD. SCIENCES.

SCREECH OWL.
(*Megascops asio*).
About $\frac{2}{3}$ Life-size.

COPYRIGHT 1910, BY A. W. MUMFORD, CHICAGO.

THE SCREECH OWL.

(*Megascops asio.*)

"The owl, for all his feathers, was a-cold."

This, as all of us know who have really seen the Owl, is purely a poetic fancy, a pathetic fancy one might really say, for a particularly sensitive and sympathetic person who had never seen what a snug, cozy-looking body the little Screech Owl is, but had heard through the night that shivery cry of his, might waste a good deal of pity on the poor freezing creature. Every night and morning down on the Point I hear him shuddering as if old-fashioned ague-chills were chasing each other up and down his back-bone. These noises, made from the hollow in the tree where he has his home, are not loud enough, however, to attract much attention, and so long as the Owl indulges in them only, he can dwell in the neighborhood a good while without advertising his retreat. As a matter of fact, we have few less obtrusive neighbors during the greater part of the year than is the little Screech Owl. It is doubtful if more than a few of the great throngs who pass through the Wooded Island in Jackson Park, Chicago, are even aware that that charming spot is the home of several of these creatures, whose first name is enough to make one jump.

One of the peculiarities of the carnivorous creatures is their possession in the fullest degree of the possibilities of sound and silence. Our Owl is no exception to the case. He has a good voice, but he knows when to keep still, for to use it all the year round and on all occasions would cause an immediate exodus of all the rats and mice of the neighborhood, so he usually keeps his vocal organs pretty well in restraint and there are few other creatures that can go as softly as he.

There are times, however, on warm nights of spring, when he feels that his voice must really have exercise so he, with several happy companions, gets out for a regular lark. It may be that, like Gideon's army or the troops that passed through Birnam wood, he has some scheme for increasing his apparent abundance. At any rate, the air seems

full of Owl, and you get it, "biff" on one side of the head, and then on the other, with silent and surprising blows, strong enough to knock off your hat or cave it in; and there are at times yells that make your heart stand still. If you retreat you will be followed some distance. I have always suspected that these attacks occurred in the vicinity of a nest, but am not sure.

Screech Owls are more numerous than is generally supposed, partly because there are two styles of plumage, the red and the gray, and many people where both are found, call one the red owl, or another the little gray owl, as the case may be, the one more numerous being considered the Screech Owl. This Owl has quite an extensive range, which includes temperate North America, east of the Great Plains and from the southern portion of the British Possessions southward nearly to the Gulf of Mexico. It is with us nearly always, for it is quite generally resident throughout its range, nesting in hollow trees and often in woodpeckers' holes. The Screech Owls seem most numerous in winter because at that time their chief food, field mice and insects, is scarce and they must seek their food in more public places. Then, too, they seek shelter in the buildings of man, and they have even been known to fly through open windows in houses.

It is quite fortunate that this Owl is so easily hidden away, so that he can become numerous, for he is one of the best mousers we have, and one of the best solutions of the English sparrow problem. He does not make an attractive pet, as he is too sleepy during the daytime, and during waking hours is a little too ferocious in aspect to encourage much petting. One of my early memories is that of helping find one in a hollow tree. We boxed the Owl up at first with the intention of making a pet of it; then under the mistaken impression that it was a bird that ought not to be encouraged to live, we decided to give it to the cat. We soon found that we had made

a mistake and given the cat to it. As soon as we had put puss at the door of the box, she looked in and seemed to think, "Why, there's a bird," and gave a leap. Then the ball of feathers woke up suddenly to the fact that "there's a

cat." There was a fine assortment of feline yells and a streak of fleeing cat. We enjoyed the surprise even more than the cat, as boys will always do, and we all were witnesses to the fact, also, that the cat had "pitched on first."

H. WALTON CLARK.

THE AUNT JANE STORIES.

IX. SOME CURIOUS ANIMALS.

PART II.

The following evening the children gathered in the sitting room and called to Aunt Jane that they were ready and waiting to know what animal could possibly begin with I.

"The Ibex is the only peculiar animal I can think of for our next," said Aunt Jane. "Its horns are so very extensive that at first thought they seem most inappropriate for a creature who lives on the craggy edges of precipices; but it is said that sometimes when closely pressed the Ibex throws itself down a steep place, and falling on its long, powerful horns, escapes unhurt."

"Now, John, you want some Ibex horns, don't you?" cried one of the mischievous girls. "Quills and horns! How funny you would look. You could, with either of them, gather cherries from our tallest tree with perfect impunity."

"I think," said John, "that it is far more likely that the Ibex tosses his pursuer over the precipice with his long horns; so look out, girls!"

"The Jerboa is a singular little rodent," Aunt Jane continued. "It has small, short fore legs, which are not used when making its wonderful leaps, and are often concealed in the hair, so the Greeks, who were wise in giving names, called it 'dipous,' or two-footed. It is sometimes called the 'jumping hare,' and by means of its very long hind legs, and long, tufted tail, it jumps remarkable distances."

"Please, Auntie, don't tell the boys how many yards it jumps," said Edith, "or tomorrow, when we want them to go ferning with us, they will be sure to say, 'Haven't time; we are engaged on the Jerboa jump.'"

"Or, perhaps, the Kangaroo leap. Shall I omit the Kangaroo for the same reason?"

"Do, do," said the girls in chorus.

"L' is our next letter. The Loris has a coat of thick fur, which is unusual on an animal in its tropical home; but it is unusually sensitive to cold. The Loris is remarkably stealthy, and capable of absolute silence, even when in motion. The arteries and veins of the Loris are disposed upon a different plan from other animals, and this is thought to account for its power of silent movement."

"Commend the silence of the Loris to the girls for imitation," interrupted Howard, "but isn't the Loris a Lemur, and isn't the Lemur a Monkey?"

"Yes, the Lemur is a form of Monkey, and is placed by naturalists at the end of the monkey tribe."

"I'm so glad you have come to 'M'," exclaimed Madge. "Now please talk about Monkeys, the queer little creatures. What is the difference between an Ape, Baboon and Monkey? Why do some Monkeys have such long tails?"

"Hold, hold!" responded Aunt Jane, "What a volley of questions, which I cannot answer now, as the Monkey must have a whole evening to himself."

"O' is our next letter."

"What does Ocelot mean?" Howard asked.

"The animal has its name from the Latin word ocellus, which means eyes; but the word does not refer to the eyes of the animal, but to the spots or marks upon it. The Platypus is a more singular creature. It has a body like the Otter, and the broad bill of a duck. When young, the

bill is so soft it does not interfere with sucking, but it hardens after the animal is weaned. The feet are curiously adapted to both swimming and digging. When the Platypus digs, the web on the fore feet folds back, so as not to interfere with the process of digging."

"I do not think there is a 'Q' animal," said John.

"The Quaggia is one. It resembles the Zebra, and has its name from the cry, which sounds like 'qua-cha.' It is sometimes harnessed and driven. It is so brave and fearless that in South Africa it is used to defend horses when turned out to pasture at night, by being placed in the same field.

"The Ratel is a honey thief. Nature has prepared it for its depredations by giving it a thick fur on a loose skin, so the angry bees cannot sting it very successfully.

"There are several kinds of Shrews, but none of them especially remarkable except for the fact that superstition has endowed them with awesome attributes. Formerly to be 'shrew-struck' was worse than to be snake-bit, yet the little creature of the elongated nose is perfectly harmless."

"I wonder if the women nicknamed Shrews are not also maligned?" said Alice.

"Perhaps so; but it will be safer for you to imitate the manners of the innocent little animal. It never scolds.

"The Tamanier and Tamandua are both ant-eaters. They have long, peculiar tongues, moistened with an adhesive liquid, which they use to convey food to their mouths. They have curious feet, and are in every way adapted to their vocation of checking the too great multiplication of ants in tropical countries."

"I do wonder how ants taste," queried Madge.

"I know," cried John. "I bit one and it was sour."

"You horrid boy!" screamed the girls.

"O, it was an accident," explained John.

"The Urson, or Canadian Porcupine, lives on a curious kind of food," Aunt Jane proceeded. "It is the living bark of trees which it strips clear from the

branches, beginning at the top and working downward. It strips the trees in a straight row, one after another, sometimes killing a hundred in one winter. Another peculiarity of the Urson is that its teeth are a bright orange.

"The Vicugua is the animal which can not be tamed in spite of the most patient efforts to domesticate it. Its habits are somewhat like the Chamois, and its home near the perpetual snows. The Wombat, according to the natives of Australia, performs the curious feat of walking into a river as deliberately as if on dry land and not discomfited by the water, it walks down the bed of the stream and emerges on the opposite bank, calmly proceeding on its way."

"That sounds like a fish story," said John.

"The girls would admire the Yak, on account of its beautiful, white tail, which is used for many ornamental purposes. Its long mane is also used to weave into cloth or to make into rope. Unfortunately, the Yak has a poor voice, and grunts like a pig.

"The Zebu is also an oxlike creature, with heavy dewlaps, long ears, and a hump on its neck. It is unusually intelligent. One variety is the sacred bull of Bramah. It is held in such veneration in India that it is allowed to do exactly as it pleases, and every whim is humored."

"I think, then," observed John, "that when I transmigrate into an animal, I'll be a Zebu."

"I've been thinking," said Howard—

"Listen!" Edith cried, "Howard says he has actually been *thinking*. We thought Aunt Jane had talked him sound asleep, he kept so still."

"I've been thinking," continued Howard, "that as likely as not animals first invented games. The Otter slides down ice banks on his back again and again for amusement. He was the first tobogganer, I'm sure."

"We will consider the games of animals some other time," Aunt Jane replied; "but I'm glad our little talk has set you thinking. Thought is the chief thing which distinguishes man from and places him at the head of all other animals.

BELLE PAXON DRURY.

THE BLACKBURNIAN WARBLER.

(*Dendroica blackburnia*.)

No foliage is dense enough to hide, and no autumnal tint too brilliant to outshine this luminous little bird that in May, as it migrates northward to its nesting ground, darts in and out of the leafy shadows like a tongue of fire.

—Neltje Blanchan, in "Bird Neighbors."

Mr. Burroughs has suggested that "Orange-throated Warbler would seem to be his right name, his characteristic cognomen; but no, he is doomed to wear the name of some discoverer, perhaps the first who robbed his nest or rifled him of his mate—Blackburn; hence, Blackburnian Warbler. The *burn* seems appropriate enough, for in these dark evergreens his throat and breast show like flame." And he has been called the Torch-bird—a beautiful and appropriate name, for as Dr. Dawson writes, "Like a beacon light his glowing breast sends a quick answering flash to the first greeting of the eastern majesty, and drunk with joy, the tiny spark moves off to set the woods on fire. When his back is turned you lose him in the upper green, but once around and flash! flash! come swift messages of beauty from this divinely fashioned heliograph." He is, indeed, a bird Prometheus, a torch-bearer.

Only those lovers of birds who also love the quiet seclusion of our deeper forests may hope to see this, the most beautiful of our warblers, in its native haunts. There it shows its orange-red throat as it flits from branch to branch, examining leaf after leaf in search of its insect-food. It is a shy bird and upon the slightest alarm will retreat to the thickest foliage. It has a happy disposition as befits so charming an ornament of the woods, and, as it hunts, it frequently utters a loud and pleasing warble.

The Blackburnian Warbler, whose bright colors would seem more appropriate in the tropics, migrates from its

winter home in Central America and the northern portion of South America, through the eastern United States, to its breeding ground in cooler climes. It prefers to place its nest in the cone-bearing trees of the north and of the higher altitudes. In the coniferous woods of the Alleghanies and from the northern United States northward, they build their nests and raise their brood of four young. Mr. Cooke says that it is one of the few warblers whose migration has been traced through the United States nearly to its nesting grounds. "In the spring of 1884 it appeared at Rodney, Mississippi, April 13; advanced to latitude 37°, May 2; latitude 39°, May 10; latitude 43°, May 16; and the most northern record contributed was latitude 45°, May 23. This gives an average of twenty-three miles a day for nearly a thousand miles."

Its nest is usually placed toward the outer end of a branch from eight to fifty feet above the ground and is constructed with twigs, rootlets, strips of fibrous bark, pine needles and moss. These materials are loosely woven together to form the wall and the nest is softly lined with feathers, grass and horsehair.

But few persons have the pleasure of seeing this beautiful warbler excepting during its migrations. The words of Mr. Chapman seem very appropriate: "The Blackburnian is uncommon enough to make us appreciate his unusual beauty. Coming in May, before the woods are fully clad, he seems like some bright-plumaged tropical bird who has lost his way and wandered to northern climes."



BLACKBURNIAN WARBLER.
(*Dendroica blackburniae*).
Life-size.

COPYRIGHT 1900, BY A. W. MUMFORD, CHICAGO.

THE INDIAN PIPE.

(*Monotropa uniflora.*)

To the amateur botanist who is about to begin a collection of specimens for an herbarium there is one plant which he must not miss and one which will afford him a great deal of pleasure in procuring, for it is a very curious and attractive plant. We refer to *Monotropa*, the Indian Pipe, or Ghost-flower.

This plant blooms during July and August. Its habitat is usually deep woods where there is a plenty of shade and moisture. It is a parasitic plant and loves to grow where some decayed vegetation is properly covered with rich earth and decayed leaves. The plant has a white and fairly wax-like appearance and is a lovely specimen when found in its native haunts. The white leaves are but little more than scales from the body of the plant, but its chief beauty is the flower itself, which is fairly white and as waxy in appearance as a fresh bloom of the tube rose.

This curious plant has no odor and when first picked it is hard. When cut it resembles a bunch of wax flowers more than it does a living plant. After it has been picked it will droop and though handled tenderly, will fade and become dark colored after a few hours.

To procure a good herbarium specimen take your botany press with you and when you find your specimen pick it as low down as possible, or, better still, procure a portion of the roots and with great care place it in your press very carefully arranging the specimen so that it will have a natural position when pressed: then strap down your press and be sure to give it air each day after it is put into the press, and do not be discouraged and think your fair flower is ruined when you look at it about the third day, for it will be as black as a coal. This is only the nature of the plant, its parasitic nature, and fairly dried it will resemble charcoal much more than it will resemble a plant. When properly pressed it will

amply repay you for all of your trouble, for it is indeed a beautiful specimen and a great addition to any herbarium.

There is an old legend that the common name, Ghost-flower, came about in a strange manner. It is a fact that there is always a reason for the common name of a plant to be what we find it to be, if we can only trace its history back far enough to find it, and how it was originally determined. The story goes, that during the early Indian wars a young soldier was taken ill during a retreat after a hard fight with the Indians and that the young man was so ill that he was obliged to fall out of the ranks. He sat down at the foot of a great oak tree and there awaited the approach of the Indians, whom he expected would put an end to his life. Much to his surprise, when the Indians came up to where he was sitting they did not molest him, but formed a circle around him, and one who could speak English came forward and spoke kindly to him, asking why he was there and if he was unable to follow his company.

The young man told his story and his statement seemed to be a help to him, for the sympathy of the Indians was gained, and they carefully placed him upon a horse and took him to their camp. When they arrived at the Indian village they were met by the entire company of Indians, both old and young, all curious to know who the prisoner was and what was to be done with him. When it was learned that the young man was ill a number of the Indian women gathered around to see him and to suggest some sort of treatment for his benefit. Among them was a young Indian girl, the daughter of a great chief. She was at once interested in the young man and had him taken to her father's wigwam, where she could better take care of him. As the days passed by, the young man grew better but still had a dreadful

cough. It was readily seen that but a few weeks at most were left for him to live. The young Indian girl did all in her power to make him comfortable and happy and to restore him to health. She was so much in love with him that she wanted him to marry her. He would not consent to this, but gave her to understand that when he got well he would make her his wife. After a few weeks the young man died and was buried among the groves of the noble chiefs of the great Indian tribe. Great mourning ceremonies were held, the young Indian girl refusing to be comforted, because she had lost her white lover.

Months rolled by and the grave of the white man was often visited by the

young braves and maidens of the tribe. During the following August a party of young Indians, among them the girl who had earnestly hoped to some time be the wife of the soldier, visited the burial place and found there growing upon the grave of the young white man a strange white flower. So white and fair did it appear that it looked as though it would melt if touched by human hands. It was the beautiful flower which we know as Indian Pipe, but the young Indians called it Ghost-flower, as they believed it represented the soul of the young white man whom they had buried there a few months before. Ever after that it was known among the Indian tribes as the Ghost-flower.

C. H. WOODWARD.

THE BALD EAGLE.

(*Haliaeetus leucocephalus*.)

High soars a patriarchal oak,
Its umbrage scath'd by lightning-stroke,
Upon whose topmost bough doth dwell
An Eagle, monarch of the dell,
O'erlooking from his eyrie grand,
The wide expanse of forest land;
Now rising high in air to sweep
In circling rings the upper deep,
Now pois'd and balanc'd in mid-space,
As resting from his airy chase;
Now sweeping downward on its way
As pirate bark sweeps on its prey.

—Isaac McLellan, "Ruffed Grouse; Partridge."

Among the birds of prey none are so well known to the general run of people as is this conspicuously marked Eagle. Its white or grayish white head and tail stand out in great contrast to its rich brown body and wings, thus rendering it a conspicuous object. The fact that its picture may be seen on our gold and silver money and that it forms a part of the coat-of-arms of our country has made this white headed Eagle known to every American citizen.

The Bald Eagle, also known as White-headed Eagle, Gray Eagle, and Sea Eagle, may be found throughout the entire American continent, from Alaska to Mexico and from the Atlantic to the

Pacific Ocean; it also lives in the north-eastern part of Siberia, and it is said to occur along the shores of the Arctic Ocean as a summer resident, although it is a resident throughout the year in Alaska. It breeds locally throughout its range, the nest being a very rude structure consisting of a mass of sticks and rubbish five or six feet in diameter and a yard or more in thickness. The favorite nesting place is in a large, tall tree, out of reach of enemies, but occasionally, and in some localities, as along the sea shore, the nest is usually placed on a projecting ledge of rock at a considerable height above the ground. Unlike some of the predaceous birds, such as the osprey, the



Bald Eagle does not place its nest at or near the top of a tree, but some distance below it, though always fifty or more feet above the ground.

The time for egg-laying varies in different localities. In Alaska the eggs are deposited in March and April, while in Florida they may be found from November to February. The eggs are generally two in number, although three are occasionally laid and the incubation occupies thirty-six days. It is interesting to note the time of year in which young birds may be found in different parts of North America. In Labrador, for example, the young are not able to leave the nest until July, while in Florida they are able to fly about the first week of April. This Eagle is an arrant coward and will desert its nest, even if there be young in it, at the approach of danger, and will not return until all evidence of danger is past. To offset this weakness of character, the Bald Eagle is said to exhibit great conjugal felicity, a pair mating for life and frequently living throughout their lives in the same locality.

The food of the Bald Eagle consists essentially of fish, and it is said that when fishes are common it will feed upon nothing else. In localities where fishes are not abundant its food consists of ducks, geese, gulls and other sea and shore birds; young mammals, such as lambs, pigs, fawns, squirrels, prairie dogs and any other mammals small enough to be captured and carried away. In some sections of the country, notably in New York and Pennsylvania, this bird has at times become a destructive pest, killing and carrying off numbers of lambs and pigs. In the Southern States it feeds largely upon water fowl, and its method of capturing its prey is almost unique. When near its quarry it will quickly fly beneath, turn upside down and sink its sharp and powerful talons into the victim's breast.

The Bald Eagle is a noted pirate and its attacks upon the fish hawk or osprey are famous (or, rather, infamous). It watches the osprey while that persevering fisherman works honestly to catch a fish. As soon as one is caught and the osprey has fairly won the prize, the Eagle swoops down and, because of his greater

size and strength, robs the osprey of his hard-earned quarry.

This aerial tragedy is thus graphically described by Wilson, in his *American Ornithology*:

"Formed by nature for braving the severest cold; feeding equally upon the produce of the sea and of the land; possessing powers of flight capable of outstripping even the tempests themselves, * * * he appears indifferent to the little change of localities or seasons; as, in a few minutes, he can pass from summer to winter, from the lower to the higher regions of the atmosphere, the abode of eternal cold, and thence descend at will to the torrid or the arctic regions of the earth. He is therefore found at all seasons in the countries he inhabits, but prefers such places as have been mentioned above, from the great partiality he has for fish.

"In procuring these he displays, in a very singular manner, the genius and energy of his character, which is fierce, contemplative, daring, and tyrannical,—attributes not exerted but on particular occasions, but when put forth, overpowering all opposition. Elevated on the high dead limb of some gigantic tree that commands a wide view of the neighboring shores and ocean, he seems calmly to contemplate the motions of the various feathered tribes that pursue their busy avocations below,—the snow-white gulls slowly winnowing the air; the busy *tringæ* coursing along the sands; trains of ducks streaming over the surface; silent and watchful cranes, intent and wading; clamorous crows, and all the winged multitudes that subsist by the bounty of this vast liquid magazine of nature. High over all these hovers one whose action instantly arrests his whole attention. By his wide curvature of wing and sudden suspension in air, he knows him to be the fish hawk, settling over some devoted victim of the deep. His eye kindles at the sight; and, balancing himself, with half-opened wings, on the branch, he watches the result. Down, rapid as an arrow, from heaven, descends the distant object of his attention; the roar of its wings reaching the air as it disappears in the deep, making the surges foam around. At this moment, the eager looks of the Eagle are all ardor; and

leveling his neck for flight, he sees the fish hawk once more emerge, struggling with its prey, and mounting in the air with screams of exultation. These are the signal for our hero, who, launching into the air, instantly gives chase, and soon gains on the fish hawk; each exerts his utmost to mount above the other, displaying in these rencontres the most elegant and sublime aerial evolutions. The unencumbered Eagle rapidly advances, and is just on the point of reaching his opponent, when, with a sudden scream, probably of despair and honest execration, the latter drops his fish; the Eagle, poisoning himself for a moment, as if to take a more certain aim, descends like a whirlwind, snatches it in his grasp ere it reaches the water, and bears his ill-gotten booty silently away to the woods.

"These predatory attacks and defensive manœuvres of the Eagle and fish hawk are matters of daily observation along the whole of our seaboard, from Georgia to New England, and frequently excite great interest in the spectators. Sympathy, however, on this as on most other occasions, generally sides with the honest and laborious sufferer, in opposition to the attacks of power, injustice, and rapacity; qualities for which our hero is so generally notorious, and which, in his superior, man, are certainly detestable. As for the feelings of the poor fish, they seem altogether out of the question."

The Bald Eagle is sometimes used as a

pet, especially by sailors, who surround it with superstitious attributes, one of them being that the ship which carries one of these birds cannot be lost or damaged. The American Indian venerated the Eagle (although it is not known that the Bald Eagle was thought more of than the golden eagle) and ornamented his head and other parts of his person with its feathers, as well as his pipes and his arrows. If taken when young it makes an interesting and comparatively harmless pet.

In regard to the value of the Bald Eagle as a destroyer of noxious animals as against its proclivity for foraging among the farmers' flocks, Mr. A. K. Fisher writes as follows in his "Hawks and Owls of the United States in Their Relation to Agriculture:" "What we have said in reference to the golden eagle applies equally well to the bird under consideration, namely, that over the greater part of the country where the natural food, fish in the present case, is abundant it is a harmless bird and should be protected; while in sections where it is injurious to sheep or other domesticated animals it should not be allowed to become numerous."

In addition to its other food, it is largely a carrion eater, rivaling the buzzard in this respect in many localities. The Bald Eagle is said to be very long lived, attaining as much as one hundred and fifty years.

COLLINS THURBER.

THE SEA-GULL.

Through opal skies, the Sea-gull flies
On strong sea-pinions borne.
A wingèd star, he sights afar
The pathways of the morn.

Serene his flight, no fears affright
His bouyant, storm-proof breast.
He saileth white, a gleam of light
Against the crimson West.

No winds can swerve the silver curve
That arcs the heavens for miles,
When seaward bound, his home is found
On far, lone, mist-veiled isles.

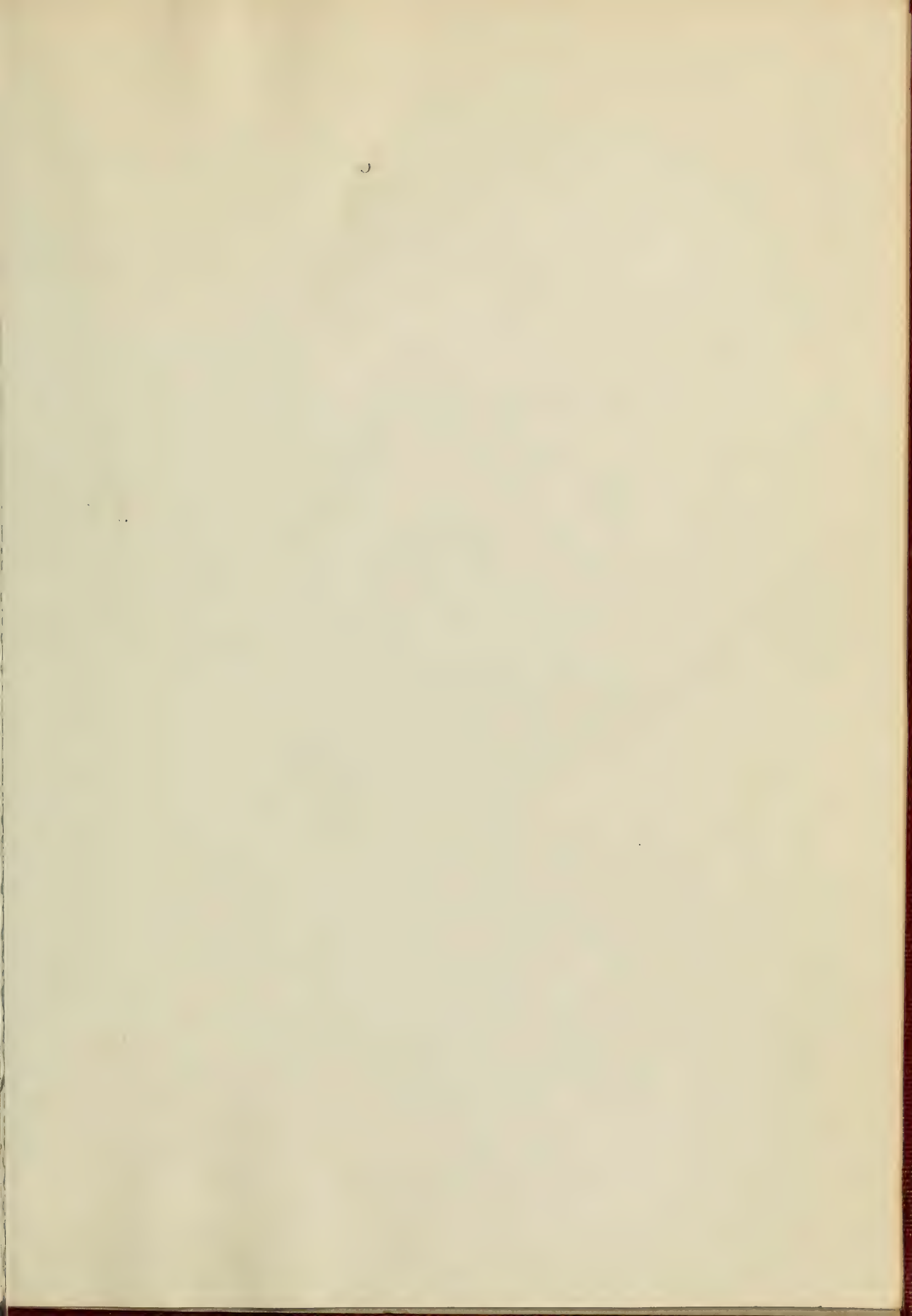
—Mrs. Merrill E. Gates.

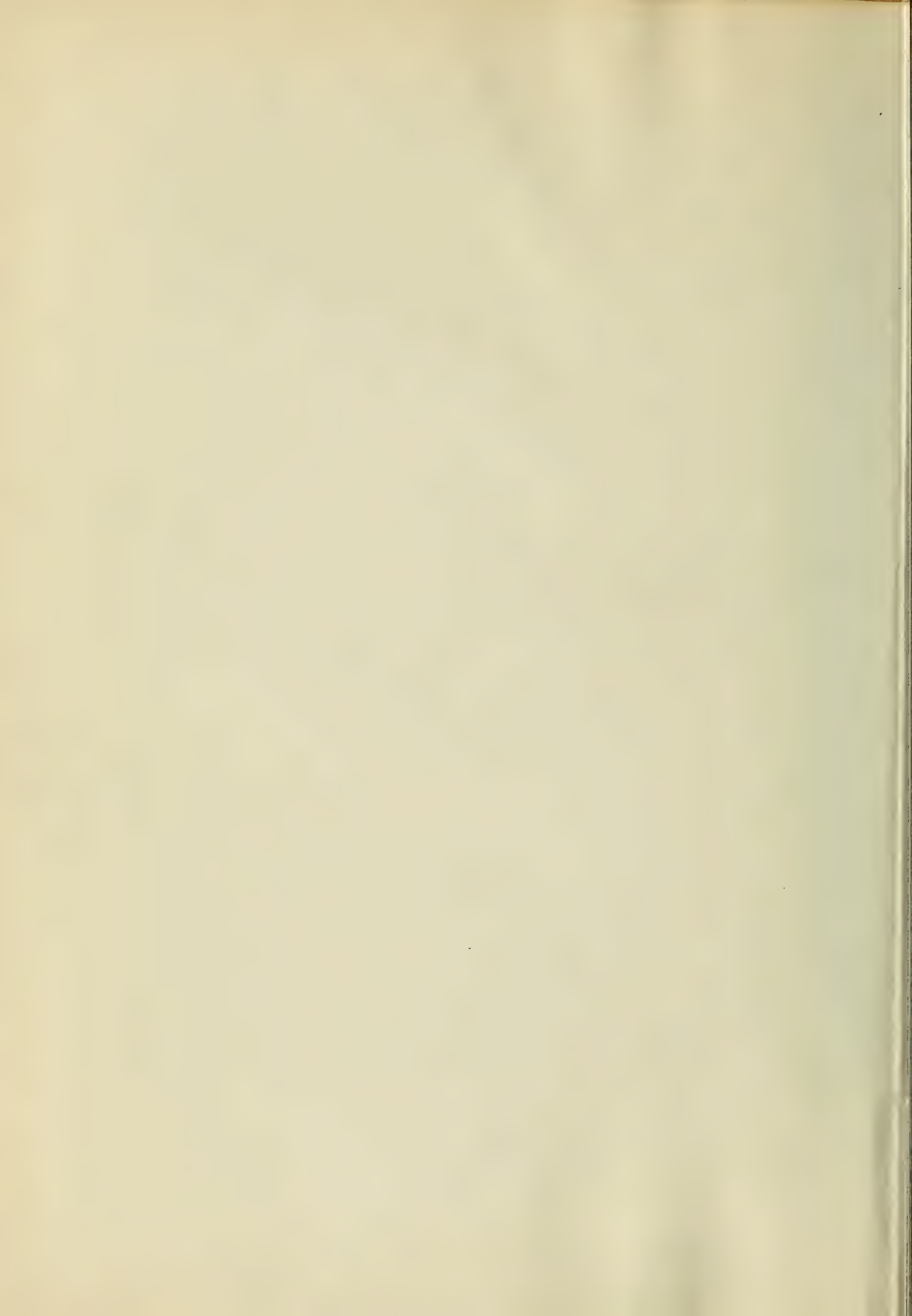
INDEX.

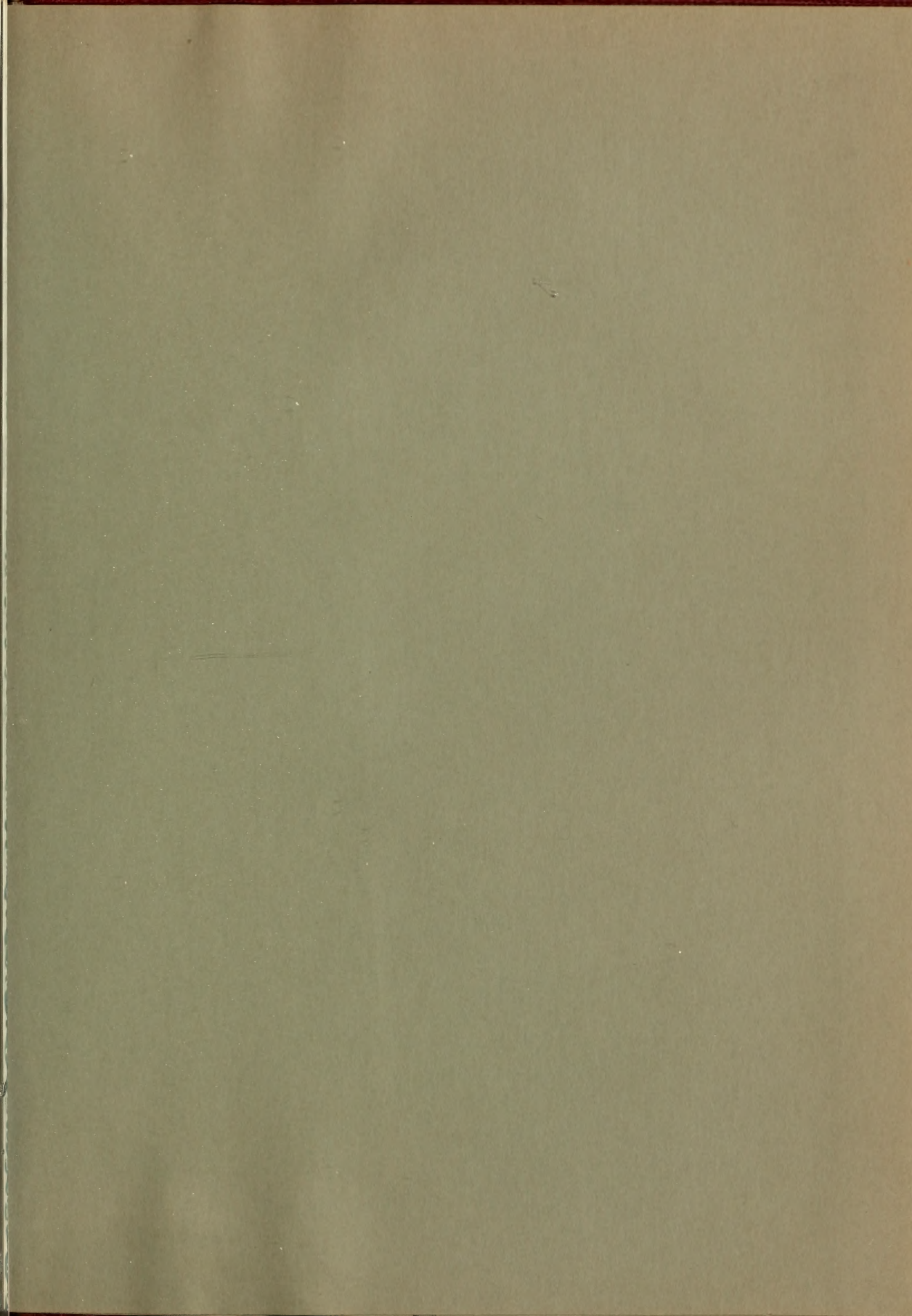
Volume XVI—June, 1904, to December, 1904, Inclusive.

Animals, Some Curious. Belle Paxson Drury	173, 226
August, In. (Poem) Frank Walcott Hutt	56
Autumn Days, Early. (Poem) George Leslie Hutchinson.....	108
Autumnal Day-dream, An. Norman O. Foerster.....	181
Bee, The Nesting of a Leaf-cutting. Wilmatte Cockerell.....	68
Bees, The Blessed. Belle Paxson Drury.....	30
Bighorn, The Mountain Sheep or. (Illustration) Seth Mindwell.....	47
Bird Homes, A Few. Rest H. Metcalf.....	65
Birds and Boys in Norway. Mary Grant O'Sheridan.....	84
Birds, Fun With the. Egbert T. Bush	208
Bluebird, The. (Illustration) Collins Thurber.....	158
Bluebird, The Mountain. (Illustration).....	98
Bluebird's Happy Home, The. Florence Bennett Scott.....	133
Bunting, The Lazuli, or Blue Linnet. (Illustration).....	2
Bunting, The Nonpareil or Painted. (Illustration).....	204
Butterflies, Interesting Facts Regarding. (Illustration)	122
Butterflies, Something about. (Illustration) Isabel M. Johnston	92
Butterfly, The Child and the. (Poem) Nixon Waterman.....	96
Cardinal Bird, The. (Illustration).....	35
Catbird, The. (Illustration).....	182
Catbird, The. Juliette A. Owen.....	182
Catbird, The. (Poem) Ella F. Mosby.....	188
Caves, Curious. Belle Paxson Drury.....	113
Chat, The Yellow-breasted. (Illustration)	74
Chicken, The Mother Prairie. J. Mayne Baltimore.....	90
Clover, A Song of. (Poem) "Saxe Holm".....	1
Coronado, California, The Beach at. Clara Hill.....	12
Coyote or Prairie Wolf, The. (Illustration) Seth Mindwell.....	119
Crows' Wedding, The. Dorothy Lord Maltby.....	17
Dingo (A Story of a Young Robin). Elizabeth Miles Derrickson.....	19
Dogs, Water. Harriet Williams Myers.....	120
Dream, For a. (Poem) Willis Edwin Hurd.....	149
Duck, The Mallard. (Illustration)	213
Duck, The Wood. (Illustration) Gerard Alan Abbott.....	134
Eagle, The Bald. (Illustration) Collins Thurber	232
Eagle, the Owl and the Little Brown Cheat, The. Viola Collins Hogarty.....	156
Earth, The Good Old. (Poem) Mrs. M. A. Maitland.....	77
Fern, To the Maiden-hair. (Poem) Roland E. Conklin.....	176
Flying Lesson, A. "Myra Ormin".....	36
Food, Strange. Louise Jamison.....	7
Fox, The American Red. (Illustration).....	38
Friends, My Farmer (In Northern Indiana). Warren Higgins.....	101, 163
Fruits, Curious. Belle Paxson Drury.....	78
Gods, Curious Rocks in the Garden of the. Mary McCrae Culter.....	168
Grosbeak, The Evening. (Illustration).....	110
Grosbeak, The Rose-breasted. (Illustration) Addie L. Booker.....	1, 6
Gull, The Sea. (Poem) Mrs. Merrill E. Gates	236
Hawk, The American Osprey or Fish. (Illustration).....	140
Hen and Her Family, The. N. Penelope Covert.....	150
Hen, The Prairie. (Illustration).....	59
Heron, The Great Blue. (Poem) J. Vallance Brown.....	137
Heron, The Snowy. (Illustration) H. Walter Clark	83
Honeysuckle. (Poem) Loveday Almira Nelson.....	29
Indian Pipe, The. C. H. Woodward	231
Jay, The Blue. (Illustration) H. Walton Clark	194
Jimmie (The Story of a Woodchuck). Pearl McCowan.....	161
Kingbird, The. (Illustration)	131

Lark, The. (Poem) Nelly Hart Woodworth	198
Lemon, The California. Louise Jamison.....	104
Linnet, The Lazuli Bunting or Blue. (Illustration).....	2
Loon, The. (Illustration) Frank Morley Woodruff.....	191
Marigolds in November. (Poem) M. D. Tolman.....	157
Merganser, The Red-breasted. (Illustration) Gerard Alan Abbott.....	11
Mist, A Sea of. (Poem) Jaen Flower.....	198
Mushrooms, Fallacies of Rules for Determining Edible. Will Sayer Moffatt	202
Musicale, A. (Poem) Maria M. Allyn.....	8
Nephila Wilderi, Queen. Katharine Theodocia Cornish	139
Nonpareil or Painted Bunting, The. (Illustration).....	204
Noon. (Poem) Rae Mortimer Seymour.....	127
November. (Poem) Jac Lowell.....	192
November, Marigolds in. (Poem) M. D. Tolman.....	157
Nuthatch, The White-breasted. (Illustration).....	26
October. (Poem) Eliza Woodworth.....	144
Oriole, The Golden. (Illustration).....	170
Osprey, The American, or Fish Hawk. (Illustration)	140
Owl, The Screech. (Illustration) H. Walton Clark	225
Plants, Air. Mary Lee Van Hook.....	176
Plants, Poisonous. Elma Iona Locke.....	20
Poem. (Selection) Rossetti	98
Rail, The Sora. (Illustration) Frank Morley Woodruff	201
Re-visited. (Poem) George Bancroft Griffith.....	13
Robin, A Story of a Young—Dingo. Elizabeth Miles Derrickson.....	19
Robin Red, My Little. Elizabeth Roberts Burton	214
Rose, The Christmas. (Poem) Cora Mae Cratty	222
Rose-time. (Poem) Frank Walcott Hutt.....	48
Sandpiper, The Least. (Illustration).....	155
Sheep or Bighorn, The Mountain. (Illustration) Seth Mindwell.....	47
Skylark, The. (Illustration).....	179
Snipe, The Wilson's. (Illustration).....	62
Song, The Surge. (Poem) Frank Farrington.....	162
Spider Family, Some Curious Facts about the. Carrie May Ashton.....	5
Spider, The Trap Door. Anson C. Allen	220
Squirrel, The Western Fox, and its Relatives. (Illustration) Seth Mindwell.....	86
Stanzas. (Poem) John Keats	193
Stone-pile, The Old. (Poem) Cora A. Matson Dolson.....	121
Summer. (Poem) Eliza Woodworth.....	61
Summer, A Lament for the. (Poem) Adelaide A. Proctor.....	97
Summer, Indian. (Poem) Emily Dickinson.....	145
Swallows, The Chimney. (Poem) Jac Lowell	207
Tanager, The Scarlet. (Poem) Nelly Hart Woodworth.....	49
Tanager, The Summer. (Illustration).....	50
Tern, The Common or Wilson's. (Illustration).....	14
Thrush, The True Story of a Brown. Austin Arnold McCausland	126
Trees and Their Life Problems. Henry Chandler Cowles.....	41
Vanessa Antiopa, A Midnight Episode with. Ellen Robertson Miller.....	128
Vireo, The Yellow-throated. (Illustration).....	216
Warbler, The Black and White Creeping. (Illustration) H. Walton Clark.....	167
Warbler, The Blackburnian. (Illustration)	228
Warbler, The Kentucky. (Illustration).....	71
Weed, A. (Poem) Louise Driscoll.....	73
Wolf, The Coyote or Prairie. (Illustration) Seth Mindwell.....	119
Woodchuck, The Story of a—Jimmie. Pearl McCowan.....	161
Woodcock, The American. (Illustration).....	23
Woodcock, The Brooding, as I Saw Her. John F. Strete.....	25
Woodcock, The Passing of the. H. Walton Clark.....	23
Woodlands, Back to the. (Poem) Samuel O. Gilman	18
Woodpecker, September and October with the California. Elnora Moody.....	72
Woods, Some of the, of the Southland. Mary M. Stratner.....	53
Woods, There is a Spirit in the. (Poem) Charles Elmer Jenney.....	170
Yellow-legs, The Greater. (Illustration).....	107









SMITHSONIAN INSTITUTION LIBRARIES



3 9088 01316 8976